MANUFACTURERS IDENTIFICATION CODE NO. 8050

CATALOG NO. 34

July 1, 1968

Northwestern TOOLS, INC.

MACHINERY Box

CLAMPING AND TOOLING COMPONENTS

DISTRIBUTORS WHO STOCK NORTHWESTERN PRODUCTS IN THE UNITED STATES AND CANADA ARE LISTED ON PAGE 23.

TIME-SAVERS FOR TOOL MAKERS

NORTHWESTERN TOOLS, INC., 3130 VALLEYWOOD DRIVE, DAYTON, OHIO 45429
Cable Code–NWTOOLSINC–DAYTON, OHIO

TIME-SAVERS FOR TOOLMAKERS

Many progressive toolrooms from coast to coast have come to depend upon the use of Northwestern Stock Clamping and Tooling Components as standard methods of saving time throughout job production. If you have not yet discovered for yourself the many ways Northwestern Components could save time in your shop, we suggest that you take a few minutes to study the following pages with this in mind. Time which other toolmakers save every day by using Northwestern Components could also be saved in your shop.

STANDARD COMPONENTS

All Northwestern Components have won their place in the line because they are widely used in the sizes carried in stock. By making a full range of sizes available in distributors' warehouses in principal cities everywhere, these units have become standard in thousands of toolrooms. Those units which are consumed in use can be replaced quickly and cheaply. Other units can be obtained in any quantity or size that is needed at any time.

NO MORE LOST MOTION

By using handy Northwestern Components, it is no longer necessary to waste expensive craftsmen's time hunting suitable pieces of scrap—or worse, using costly new stock—and the wasting of more time to fabricate makeshift pieces to use temporarily. The time and motion saved by using Northwestern ready-made Components can mean important dollars saved for you. It also can add to the productive work-hours of each toolmaker throughout every day.

UNCONDITIONALLY GUARANTEED

Northwestern Tools and Components are manufactured from the proper materials for each job. They are carefully finished and, if necessary, heat treated. They are made by skilled craftsmen who have had actual tool room experience. That is why we can stand behind our unconditional guarantee of every Northwestern product.

TEMPLATES AVAILABLE

Tracing Templates are available in any quantity you need. Ask your distributor or write the factory. These are suitable for use in tracing or pasting up to save time in preparing drawings, whether for quotation, or for production. This is another of the many ways Northwestern helps toolmakers save time.

GLOSSARY OF TECHNICAL INFORMATION:

HEAT TREATED STEEL—Carbonnitride or Chapmanize Hardened.
BLACK PENTRATE FINISH—Government Spec. MIL C-13924.
STUDS—Stressproof Steel—Min. Tensile Strength 125,000 P.S.I.
CADMIUM PLATE—Federal QQ-P-416, Type 1, Class 2.
CAST IRON HAND KNOBS—SAE-111 Class 25 Material
ALL SPRINGS—Govt. Spec. MIL-W-6101, Federal QQ-W-470.

TO HELP YOU MAKE A PROFIT

Northwestern is dedicated to helping toolmakers make a profit. There is a Northwestern part, component, or accessory for just about every need that comes up frequently.

These components are carried in distributors' stocks near you, wherever your plant may be located. Prices are kept reasonable through mass production—usually below what such parts would cost to reproduce in your own shop.

In addition to the standard components shown on these pages, many special sizes can be furnished upon short notice, and often at only slightly increased costs.

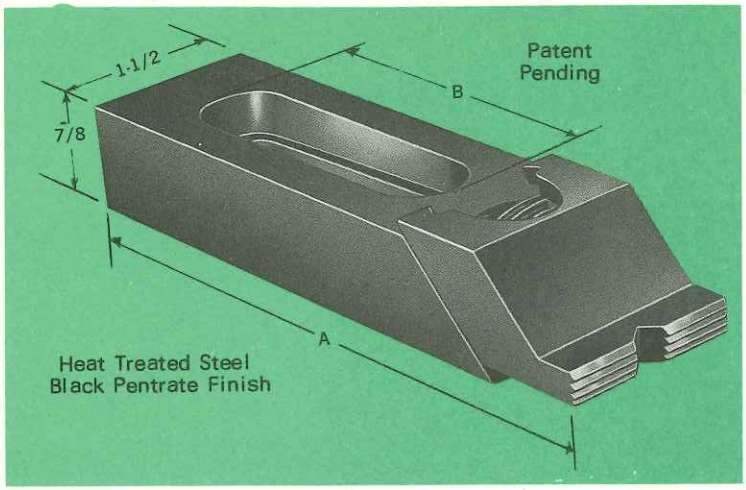
Because competition is so keen in today's tool market, more and more toolmakers are turning to Northwestern Components to reduce production costs, and step up productive time of highly paid craftsmen.

It will pay you to check carefully the possibility of lowering costs and increasing profits through the use of Northwestern Time-Savers for Toolmakers in your toolroom operation.

NATIONAL INSTITUTE OF JIG AND FIXTURE COMPONENT MANUFACTURERS NIJFCM

E. J. Thomeczek
PRESIDENT

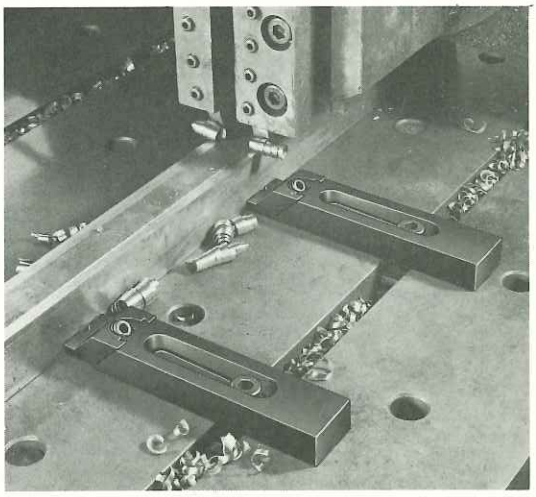
Northwestern TOE CLAMPS



A powerful LOW PROFILE clamp for use on mills, planers, lathes, jig borers, etc.

Will not interfere with cutting tools or reading and measuring instruments. The gripping part of the nose is only 1/4" thick.

The nose has a minimum of 1/4" travel vertically and horizontally.



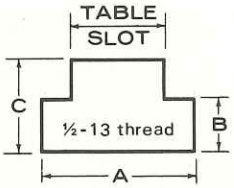
The 45° clamping angle of the nose forces the workpiece down on the worktable and in against a solid locator.

A standard 1/2" socket head screw is used to anchor the clamp. T-Slot Nuts with 1/2-13 threads for table slots 9/16 thru 1", and "T" Wrenches to fit the nose actuating screw are available.

TOE CLAMPS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	Ship Wgt. Per Doz.
41001	TC-1	9.75	4	2	14 Lbs.
41002	TC-2	13.50	5 5/8	2 3/4	18 Lbs.
41003	TC-3	15.75	7 3/8	3 3/4	24 Lbs.

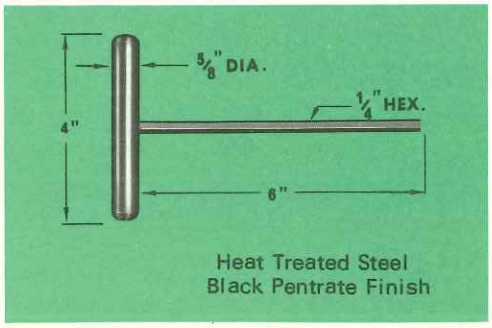


Toe Clamp Nuts are tapped thru to solidly anchor the clamp under all conditions.

TOE CLAMP NUTS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Table Slot	A	B	C	Ship Wgt. Per Doz.
42001	TCN-1	.60	9/16	7/8	11/32	5/8	1 1/2 Lbs.
42002	TCN-2	.65	5/8	1"	11/32	5/8	2 Lbs.
42003	TCN-3	.70	11/16	1 1/8	7/16	3/4	2 1/2 Lbs.
42004	TCN-4	.90	13/16	1 1/4	9/16	1"	5 Lbs.
42005	TCN-5	1.00	7/8	1 1/2	9/16	1"	6 Lbs.
42006	TCN-6	1.60	1"	1 5/8	5/8	1"	7 Lbs.



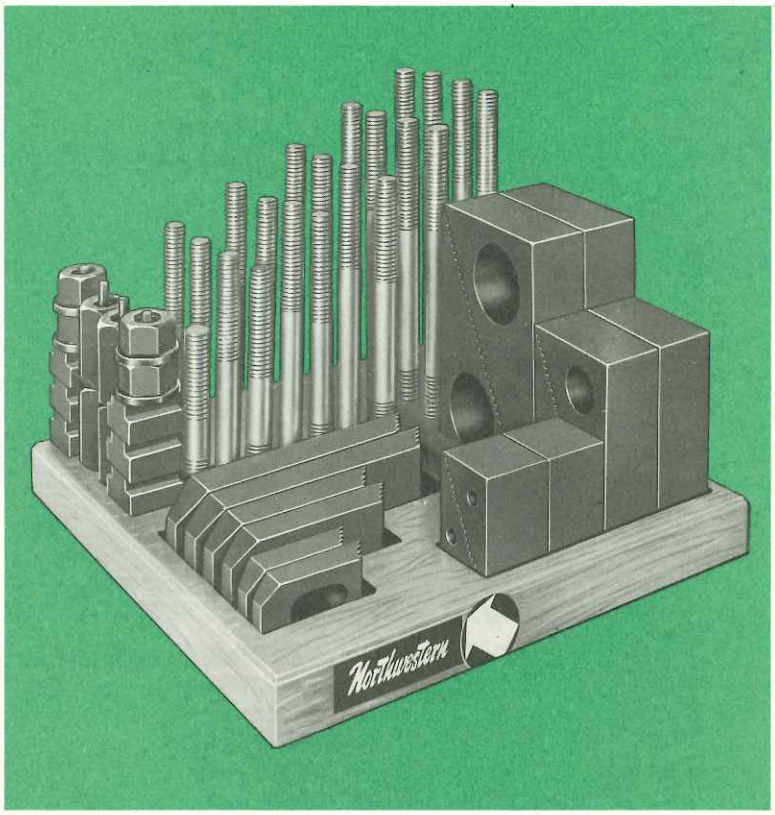
"T" WRENCHES

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Ship Wgt. Per Doz.
43001	TW-1	1.90	6 Lbs.

Northwestern CLAMPING KITS

ALL STEEL BLOCKS AND CLAMPS



EACH KIT CONTAINS:

- 24 STUDS
- 6 T-SLOT NUTS
- 4 FLANGED NUTS
- 4 COUPLING NUTS
- 6 STEP BLOCKS
- 6 STEP CLAMPS
- HANDY HOLDER

Full Range of Sizes

FULLY GUARANTEED

EACH KIT PROVIDES AT LEAST FOUR CLAMPING BOLTS FROM 3" UP TO 15" LONG

SYMBOL OF TIME SAVERS

KITS WITH STANDARD BLOCKS 1" WIDE

Part No.	Cat. No.	Price Per Kit	Table Slot	Stud Size	T-Nut & Stud Set No.	Step Clamps 2 Each	Step Blocks 2 Each	Ship. Wgt. Per Kit
11101	375-CK	59.00	3/8	5/16-18	375-TS	25-S38, 40-S38, 60-S38	1-S, 2-S, 3-S	16 Lbs.
11102	437-CK	60.00	7/16	3/8-16	437-TS	25-S38, 40-S38, 60-S38	1-S, 2-S, 3-S	19 Lbs.
11103	500-CK	60.00	1/2	3/8-16	500-TS	25-S38, 40-S38, 60-S38	1-S, 2-S, 3-S	19 Lbs.
11104	560-CK	60.50	9/16	3/8-16	560-TS	25-S38, 40-S38, 60-S38	1-S, 2-S, 3-S	19 Lbs.
11105	S562-CK	65.00	9/16	1/2-13	562-TS	25-S12, 40-S12, 60-S12	1-S, 2-S, 3-S	24 Lbs.
11106	S625-CK	65.50	5/8	1/2-13	625-TS	25-S12, 40-S12, 60-S12	1-S, 2-S, 3-S	24 Lbs.
11107	S680-CK	66.00	11/16	1/2-13	680-TS	25-S12, 40-S12, 60-S12	1-S, 2-S, 3-S	24 Lbs.
11108	S687-CK	69.00	11/16	5/8-11	687-TS	25-S58, 40-S58, 60-S58	1-S, 2-S, 3-S	30 Lbs.
11109	S750-CK	69.50	3/4	5/8-11	750-TS	25-S58, 40-S58, 60-S58	1-S, 2-S, 3-S	30 Lbs.
11110	S800-CK	70.00	13/16	5/8-11	800-TS	25-S58, 40-S58, 60-S58	1-S, 2-S, 3-S	31 Lbs.

KITS WITH HEAVY DUTY BLOCKS 1½" WIDE

11111	562-CK	92.50	9/16	1/2-13	562-TS	25-S12, 40-S12, 60-S12	4-S, 5-S, 6-S	41 Lbs.
11112	625-CK	93.00	5/8	1/2-13	625-TS	25-S12, 40-S12, 60-S12	4-S, 5-S, 6-S	41 Lbs.
11113	680-CK	93.50	11/16	1/2-13	680-TS	25-S12, 40-S12, 60-S12	4-S, 5-S, 6-S	41 Lbs.
11114	687-CK	96.50	11/16	5/8-11	687-TS	25-S58, 40-S58, 60-S58	4-S, 5-S, 6-S	47 Lbs.
11115	750-CK	97.00	3/4	5/8-11	750-TS	25-S58, 40-S58, 60-S58	4-S, 5-S, 6-S	47 Lbs.
11116	800-CK	98.00	13/16	5/8-11	800-TS	25-S58, 40-S58, 60-S58	4-S, 5-S, 6-S	48 Lbs.
11117	812-CK	113.50	13/16	3/4-10	812-TS	40-S34, 60-S34, 80-S34	4-S, 5-S, 6-S	62 Lbs.
11118	875-CK	114.00	7/8	3/4-10	875-TS	40-S34, 60-S34, 80-S34	4-S, 5-S, 6-S	63 Lbs.
11119	102-CK	117.50	1"	3/4-10	102-TS	40-S34, 60-S34, 80-S34	4-S, 5-S, 6-S	65 Lbs.
11120	1060-CK	118.50	1 1/16	3/4-10	1060-TS	40-S34, 60-S34, 80-S34	4-S, 5-S, 6-S	67 Lbs.

KITS WITH DOUBLE DUTY BLOCKS 2" WIDE

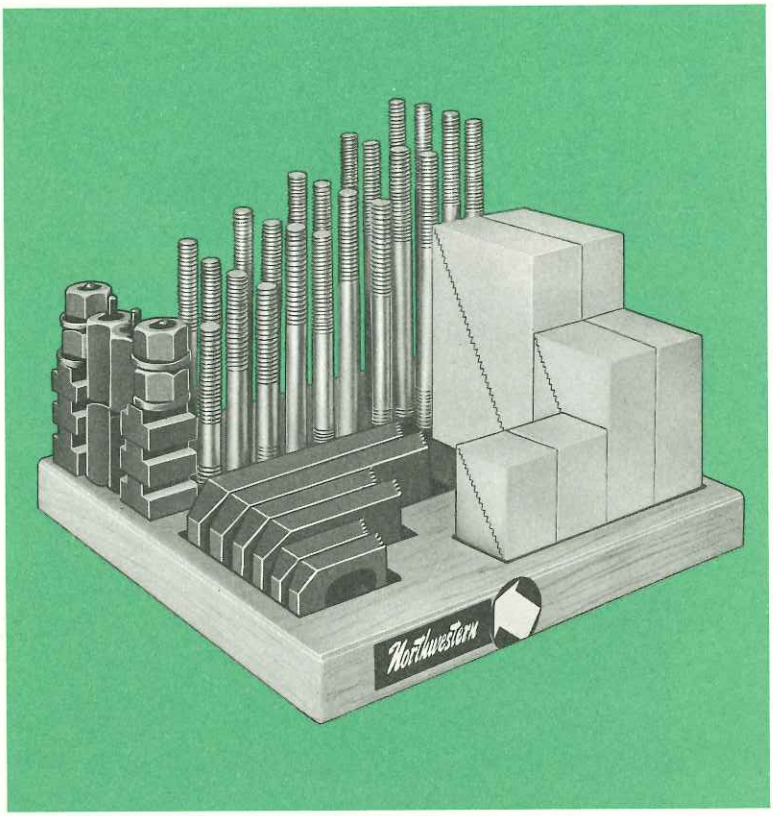
11121	100-CK	172.00	1"	7/8-9	100-TS	60-S10, 80-S10, 10-S10	7-S, 8-S, 9-S	91 Lbs.
11122	1062-CK	179.50	1 1/16	1"-8	1062-TS	60-S10, 80-S10, 10-S10	7-S, 8-S, 9-S	98 Lbs.

CLAMPING KITS ARE AVAILABLE FOR ALL MACHINE TOOLS

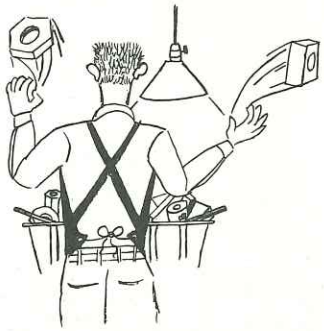
SEE SELECTION CHART ON PAGE 23

THE HANDIEST, MOST COMPLETE
COMBINATIONS EVER OFFERED

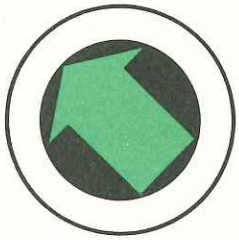
ALUMINUM BLOCKS WITH STEEL CLAMPS



WHY WASTE VALUABLE TIME
HUNTING SUITABLE SCRAP?



PLENTY OF THE RIGHT PIECES
IN THESE COMPLETE N-W KITS



SYMBOL OF
TIME SAVERS

KITS WITH STANDARD BLOCKS 1" WIDE

Part No.	Cat. No.	Price Per Kit	Table Slot	Stud Size	T-Nut & Stud Set No.	Step Clamps 2 Each	Step Blocks 2 Each	Ship. Wgt. Per Kit
11001	375-ACK	57.00	3/8	5/16-18	375-TS	25-S38, 40-S38, 60-S38	1-A, 2-A, 3-A	13 Lbs.
11002	437-ACK	58.00	7/16	3/8-16	437-TS	25-S38, 40-S38, 60-S38	1-A, 2-A, 3-A	16 Lbs.
11003	500-ACK	58.00	1/2	3/8-16	500-TS	25-S38, 40-S38, 60-S38	1-A, 2-A, 3-A	16 Lbs.
11004	560-ACK	58.50	9/16	3/8-16	560-TS	25-S38 ,40-S38, 60-S38	1-A, 2-A, 3-A	16 Lbs.
11005	S562-ACK	62.50	9/16	1/2-13	562-TS	25-S12, 40-S12, 60-S12	1-A, 2-A, 3-A	21 Lbs.
11006	S625-ACK	63.00	5/8	1/2-13	625-TS	25-S12, 40-S12, 60-S12	1-A, 2-A, 3-A	21 Lbs.
11007	S680-ACK	63.50	11/16	1/2-13	680-TS	25-S12, 40-S12, 60-S12	1-A, 2-A, 3-A	21 Lbs.
11008	S687-ACK	66.50	11/16	5/8-11	687-TS	25-S58, 40-S58, 60-S58	1-A, 2-A, 3-A	27 Lbs.
11009	S750-ACK	67.00	3/4	5/8-11	750-TS	25-S58, 40-S58, 60-S58	1-A, 2-A, 3-A	27 Lbs.
11010	S800-ACK	68.00	13/16	5/8-11	800-TS	25-S58, 40-S58, 60-S58	1-A, 2-A, 3-A	28 Lbs.

KITS WITH HEAVY DUTY BLOCKS 1½" WIDE

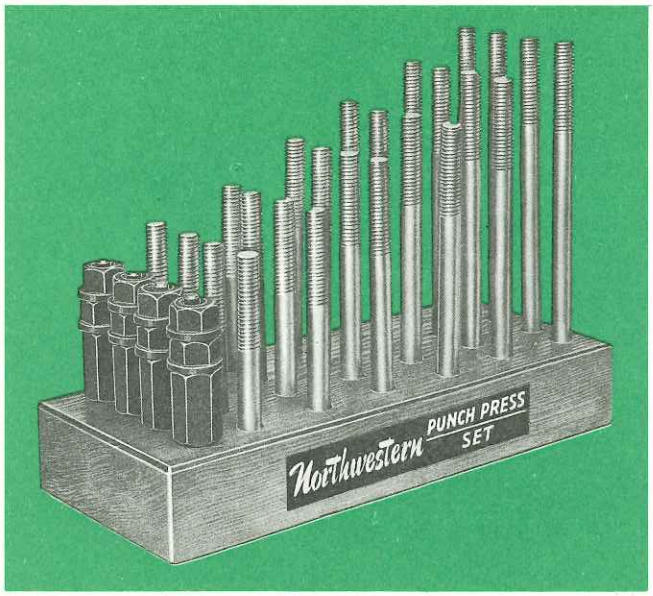
11011	562-ACK	89.50	9/16	1/2-13	562-TS	25-S12, 40-S12, 60-S12	4-A, 5-A, 6-A	29 Lbs.
11012	625-ACK	90.00	5/8	1/2-13	625-TS	25-S12, 40-S12, 60-S12	4-A, 5-A, 6-A	29 Lbs.
11013	680-ACK	90.50	11/16	1/2-13	680-TS	25-S12, 40-S12, 60-S12	4-A, 5-A, 6-A	29 Lbs.
11014	687-ACK	93.50	11/16	5/8-11	687-TS	25-S58, 40-S58, 60-S58	4-A, 5-A, 6-A	35 Lbs.
11015	750-ACK	94.00	3/4	5/8-11	750-TS	25-S58, 40-S58, 60-S58	4-A, 5-A, 6-A	35 Lbs.
11016	800-ACK	95.00	13/16	5/8-11	800-TS	25-S58, 40-S58, 60-S58	4-A, 5-A, 6-A	36 Lbs.
11017	812-ACK	110.50	13/16	3/4-10	812-TS	40-S34, 60-S34, 80-S34	4-A, 5-A, 6-A	50 Lbs.
11018	875-ACK	111.00	7/8	3/4-10	875-TS	40-S34, 60-S34, 80-S34	4-A, 5-A, 6-A	51 Lbs.
11019	102-ACK	114.50	1"	3/4-10	102-TS	40-S34, 60-S34, 80-S34	4-A, 5-A, 6-A	53 Lbs.
11020	1060-ACK	115.50	1 1/16	3/4-10	1060-TS	40-S34, 60-S34, 80-S34	4-A, 5-A, 6-A	55 Lbs.

KITS WITH DOUBLE DUTY BLOCKS 2" WIDE

11021	100-ACK	168.00	1"	7/8-9	100-TS	60-S10, 80-S10, 10-S10	7-A, 8-A, 9-A	75 Lbs.
11022	1062-ACK	175.00	1 1/16	1"-8	1062-TS	60-S10, 80-S10, 10-S10	7-A, 8-A, 9-A	82 Lbs.

ORDER FROM YOUR LOCAL DISTRIBUTOR—SEE PAGE 23

HANDY SETS BY NORTHWESTERN



T-NUT AND STUD SETS

Part No.	Cat. No.	Price Per Set	Table Slot	T-Nut Size	Stud Size	Ship. Wgt. Per Set
40001	375-TS	17.00	3/8	375-TN	5/16-18	5 Lbs.
40002	437-TS	18.00	7/16	437-TN	3/8-16	7½ Lbs.
40003	500-TS	18.00	1/2	500-TN	3/8-16	7½ Lbs.
40004	560-TS	18.30	9/16	560-TN	3/8-16	8 Lbs.
40005	562-TS	22.40	9/16	562-TN	1/2-13	10½ Lbs.
40006	625-TS	22.70	5/8	625-TN	1/2-13	10½ Lbs.
40007	680-TS	23.00	11/16	680-TN	1/2-13	11½ Lbs.
40008	687-TS	25.50	11/16	687-TN	5/8-11	16 Lbs.
40009	750-TS	25.80	3/4	750-TN	5/8-11	16 Lbs.
40010	800-TS	26.70	13/16	800-TN	5/8-11	17 Lbs.
40011	812-TS	32.00	13/16	812-TN	3/4-10	23 Lbs.
40012	875-TS	32.30	7/8	875-TN	3/4-10	24 lbs.
40013	102-TS	35.90	1"	102-TN	3/4-10	25 Lbs.
40014	100-TS	42.00	1"	100-TN	7/8-9	30 lbs.
40015	1060-TS	37.00	1 1/16	1060-TN	3/4-10	26 Lbs.
40016	1062-TS	49.30	1 1/16	1062-TN	1"-8	37 Lbs.

SETS CONSIST OF:

- 4-Studs of each length: 3"-4"-5" 6"-7"-8"
- 6-T-Nuts to fit your machine
- 4-Coupling Nuts
- 4-Flanged Nuts
- Handy Holder

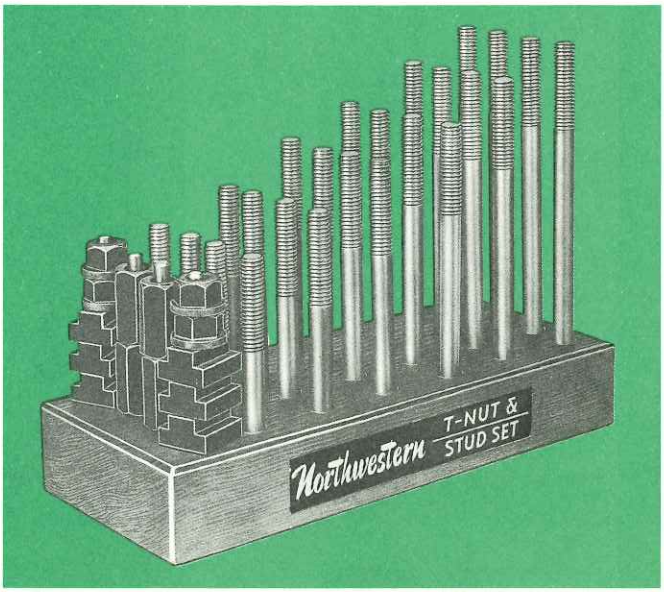
PUNCH PRESS SETS

Part No.	Cat. No.	Price Per Set	Thread Size	Ship. Wgt. Per Set
24001	12-PP	21.00	½-13	10 Lbs.
24002	58-PP	24.00	5/8-11	15½ Lbs.
24003	34-PP	30.00	¾-10	22 Lbs.
24004	78-PP	37.50	7/8-9	25 Lbs.
24005	10-PP	44.00	1"-8	37 Lbs.

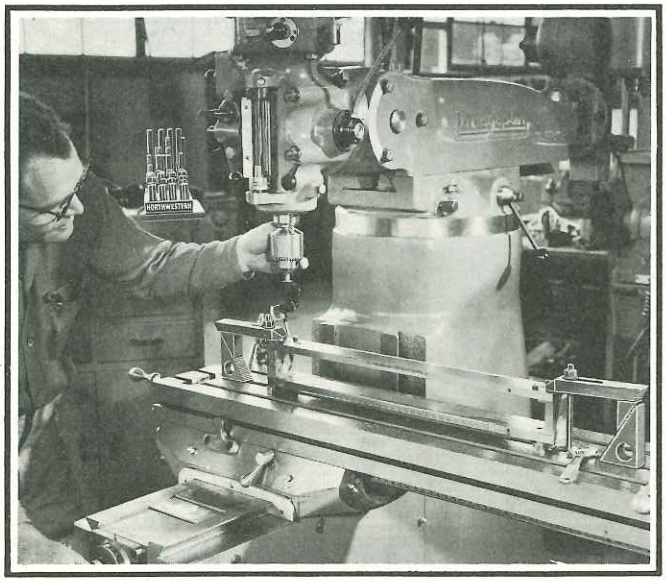
SETS CONSIST OF:

- 4-Studs of each length: 3"-4"-5"-6"-7"-8"
- 4-Coupling Nuts
- 8-Flanged Nuts
- Handy Holder

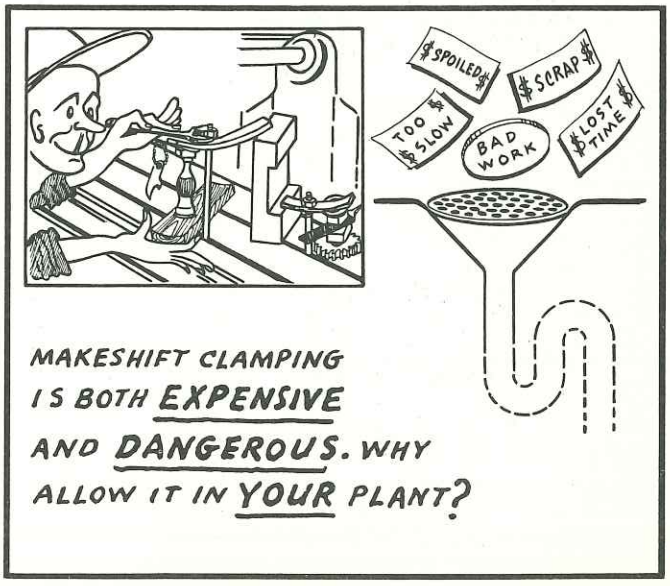
EACH SET PROVIDES AT LEAST FOUR CLAMPING BOLTS FROM 3" UP TO 15" LONG



SETS TO FIT ALL MACHINERY – SEE SELECTION CHART ON PAGE 23



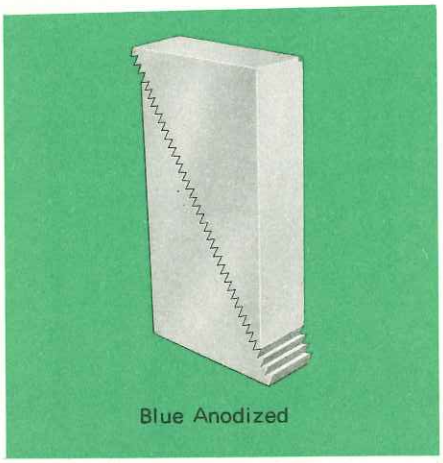
ELIMINATE THE TIME SPENT SEARCHING FOR CORRECT LENGTH STUDS FOR SET-UPS



REDUCE SET-UP TIME
NO HIT-OR-MISS WITH COMPLETE SET

Northwestern

Heat Treated Steel
Black Pentrate Finish



Blue Anodized

STEP BLOCKS

Packaged 12 To a Box

STEEL

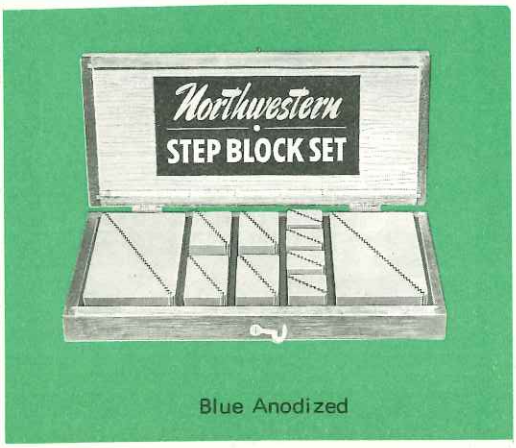
Part No.	Cat. No.	Price Per Block	Capacity of Full Block	Height of ½ Block	Ship. Wgt. Per Doz.
		STANDARD BLOCKS 1" WIDE			
36101	1-S	1.70	¾ to 1½	1⅛	3 Lbs.
36102	2-S	2.35	1⅛ to 2½	1¾	7 Lbs.
36103	3-S	5.30	2½ to 6″	3⅞	27 Lbs.
		HEAVY DUTY BLOCKS 1½" WIDE			
36104	4-S	3.90	1½ to 3¾	2½	19 Lbs.
36105	5-S	7.30	2½ to 6″	3⅞	40½ Lbs.
36106	6-S	12.00	3½ to 9″	5½	73½ Lbs.
		DOUBLE DUTY BLOCKS 2" WIDE			
36107	7-S	4.75	1½ to 3¾	2½	24½ Lbs.
36108	8-S	8.50	2½ to 6″	3⅞	53 Lbs.
36109	9-S	15.85	3½ to 9″	5½	99 Lbs.

6061-T6 ALUMINUM

Part No.	Cat. No.	Price Per Block	Capacity of Full Block	Height of ½ Block	Ship. Wgt. Per Doz.
		STANDARD BLOCKS 1" WIDE			
36001	1-A	1.50	¾ to 1½	1⅛	1 Lb.
36002	2-A	2.30	1⅛ to 2½	1¾	2½ Lbs.
36003	3-A	4.40	2½ to 6″	3⅞	11½ Lbs.
		HEAVY DUTY BLOCKS 1½" WIDE			
36004	4-A	3.80	1½ to 3¾	2½	6½ Lbs.
36005	5-A	5.90	2½ to 6″	3⅞	17 Lbs.
36006	6-A	12.00	3½ to 9″	5½	35 Lbs.
		DOUBLE DUTY BLOCKS 2" WIDE			
36007	7-A	4.20	1½ to 3¾	2½	8½ Lbs.
36008	8-A	7.00	2½ to 6″	3⅞	23 Lbs.
36009	9-A	15.85	3½ to 9″	5½	46 Lbs.

One Block is Two Pieces • All Blocks Work with Step Strap Clamps

Heat Treated Steel
Black Pentrate Finish



Blue Anodized

STEP BLOCK SETS

STEEL

Part No.	Cat. No.	Price Per Set	Ship. Wgt. Per Set	SET CONSISTS OF:	
37101	A-S	28.50	9 Lbs.	4 #1-S, 4 #2-S, 2 #3-S	STURDY PLYWOOD CASE
37102	B-S	13.40	4 Lbs.	2 #1-S, 2 #2-S, 1 #3-S	STURDY FIBRE BOARD BOX
37103	C-S	8.10	2 Lbs.	2 #1-S, 2 #2-S	STURDY FIBRE BOARD BOX

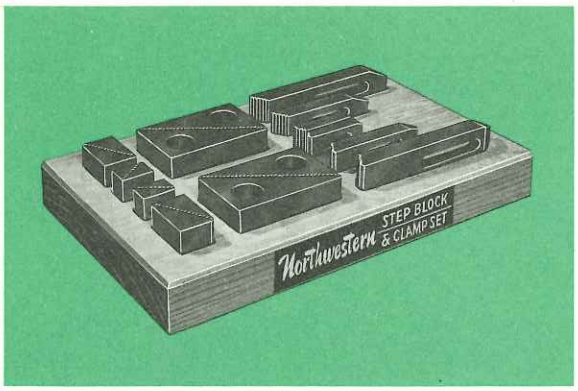
One Block is Two Pieces

6061-T6 ALUMINUM

Part No.	Cat. No.	Price Per Set	Ship. Wgt. Per Set	SET CONSISTS OF:	
37001	A-A	25.75	4 Lbs.	4 #1-A, 4 #2-A, 2 #3-A	STURDY PLYWOOD CASE
37002	B-A	12.00	2 Lbs.	2 #1-A, 2 #2-A, 1 #3-A	STURDY FIBRE BOARD BOX
37003	C-A	7.60	1 Lb.	2 #1-A, 2 #2-A	STURDY FIBRE BOARD BOX

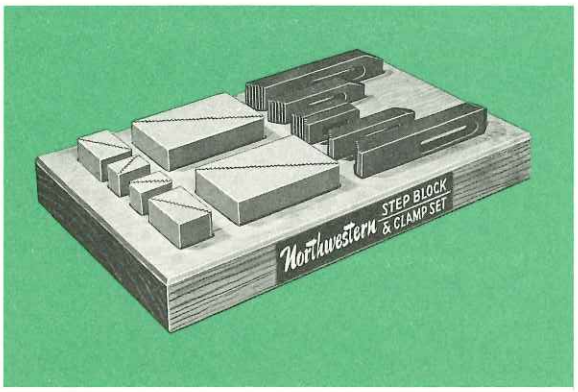
All Blocks Work with Step Strap Clamps

STEP BLOCK AND CLAMP SETS



ALL STEEL BLOCKS AND CLAMPS

Part No.	Cat. No.	Price Per Set	Bolt Size	SET CONSISTS OF 2 EACH: Step Clamps	Step Blocks	Ship. Wgt. Per Set
WITH STANDARD BLOCKS 1" WIDE						
35101	38BCS	42.90	5/16 or 3/8"	25 S38, 40 S38, 60 S38	1-S, 2-S, 3-S	11 Lbs.
35102	S12BCS	43.90	1/2	25 S12, 40 S12, 60 S12	1-S, 2-S, 3-S	13 Lbs.
35103	S58BCS	44.80	5/8	25 S58, 40 S58, 60 S58	1-S, 2-S, 3-S	14 Lbs.
WITH HEAVY DUTY BLOCKS 1½" WIDE						
35104	12BCS	72.10	1/2	25 S12, 40 S12, 60 S12	4-S, 5-S, 6-S	30 Lbs.
35105	58BCS	73.00	5/8	25 S58, 40 S58, 60 S58	4-S, 5-S, 6-S	31 Lbs.
35106	34BCS	80.50	3/4	40 S34, 60 S34, 80 S34	4-S, 5-S, 6-S	39 Lbs.
WITH DOUBLE DUTY BLOCKS 2" WIDE						
35107	10BCS	132.80	7/8 or 1"	60 S10, 80 S10, 10 S10	7-S, 8-S, 9-S	61 Lbs.



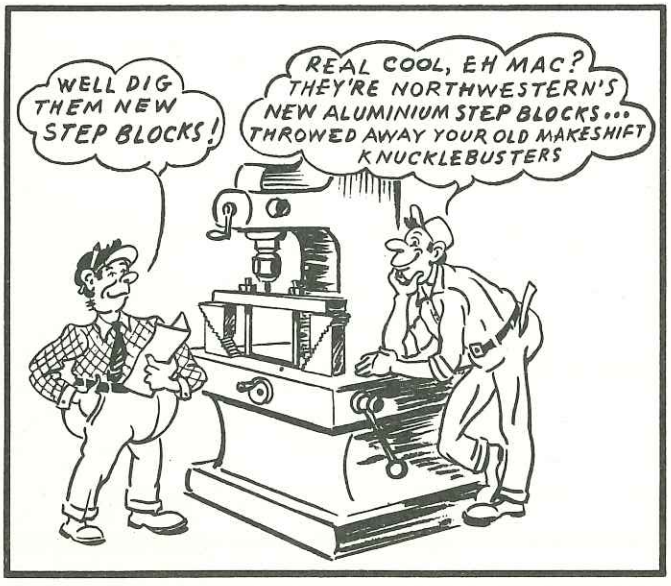
ALUMINUM BLOCKS WITH STEEL CLAMPS

Part No.	Cat. No.	Price Per Set	Bolt Size	SET CONSISTS OF 2 EACH: Step Clamps	Step Blocks	Ship. Wgt. Per Set
WITH STANDARD BLOCKS 1" WIDE						
35001	38ABCS	40.60	5/16 or 3/8"	25 S38, 40 S38, 60 S38	1-A, 2-A, 3-A	8 Lbs.
35002	S12ABCS	41.60	1/2	25 S12, 40 S12, 60 S12	1-A, 2-A, 3-A	10 Lbs.
35003	S58ABCS	42.50	5/8	25 S58, 40 S58, 60 S58	1-A, 2-A, 3-A	11 Lbs.
WITH HEAVY DUTY BLOCKS 1½" WIDE						
35004	12ABCS	69.10	1/2	25 S12, 40 S12, 60 S12	4-A, 5-A, 6-A	18 Lbs.
35005	58ABCS	70.00	5/8	25 S58, 40 S58, 60 S58	4-A, 5-A, 6-A	19 Lbs.
35006	34ABCS	77.50	3/4	40 S34, 60 S34, 80 S34	4-A, 5-A, 6-A	27 Lbs.
WITH DOUBLE DUTY BLOCKS 2" WIDE						
35007	10ABCS	128.70	7/8 or 1"	60 S10, 80 S10, 10 S10	7-A, 8-A, 9-A	45 Lbs.

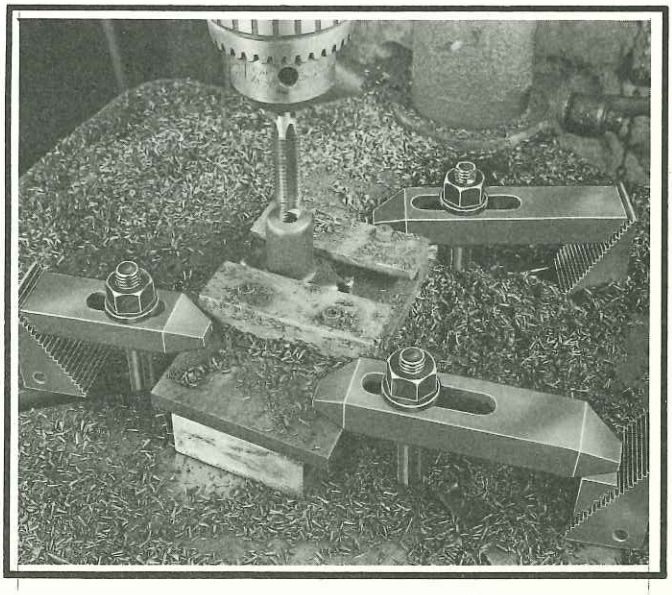
HANDY HOLDER FURNISHED WITH ALL SETS

SEE FOR YOURSELF HOW THESE TOOLS CAN SAVE TIME IN YOUR SHOP

SYMBOL OF TIME SAVERS


WELL DIG THEM NEW STEP BLOCKS!
REAL COOL, EH MAC? THEY'RE NORTHWESTERN'S NEW ALUMINIUM STEP BLOCKS... THROWED AWAY YOUR OLD MAKESHIFT KNUCKLEBUSTERS

SAVE TIME SPENT LOOKING FOR HIT-OR-MISS TEMPORARY BLOCKS AND SHIMS



SETS TO FIT ALL MACHINERY
SEE SELECTION CHART ON PAGE 23

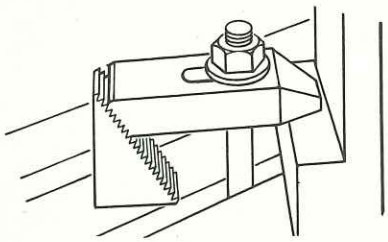
Northwestern STRAP CLAMPS

Heat Treated Steel
Black Pentrate Finish

STEP CLAMPS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Bolt Size	Length	Width	Thick-ness	Ship. Wgt. Per Doz.
12101	25-S38	2.85	5/16 or 3/8	2½	1″	½	3 Lbs.
12102	40-S38	3.80	5/16 or 3/8	4″	1″	5/8	6 Lbs.
12103	60-S38	4.45	5/16 or 3/8	6″	1⅛	¾	12½ Lbs.
12104	25-S12	2.90	½	2½	1⅛	½	3 Lbs.
12105	40-S12	3.95	½	4″	1¼	¾	10 Lbs.
12106	60-S12	4.75	½	6″	1¼	⅞	18 Lbs.
12107	25-S58	3.15	5/8	2½	1¼	5/8	4½ Lbs.
12108	40-S58	4.05	5/8	4″	1½	¾	11 Lbs.
12109	60-S58	4.85	5/8	6″	1½	⅞	19 Lbs.
12110	40-S34	4.45	¾	4″	1½	¾	10 Lbs.
12111	60-S34	5.00	¾	6″	1½	1″	20½ Lbs.
12112	80-S34	6.35	¾	8″	1¾	1⅛	40 Lbs.
12113	60-S10	8.05	⅞ or 1″	6″	2″	1¼	34 Lbs.
12114	80-S10	11.80	⅞ or 1″	8″	2″	1⅜	53 Lbs.
12115	10-S10	14.30	⅞ or 1″	10″	2″	1½	78 Lbs.



Step clamp teeth match all sizes of step blocks, steel or aluminum

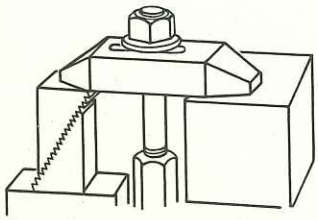
Northwestern TOOLS ARE UNCONDITIONALLY GUARANTEED

Heat Treated Steel
Black Pentrate Finish

PLAIN CLAMPS

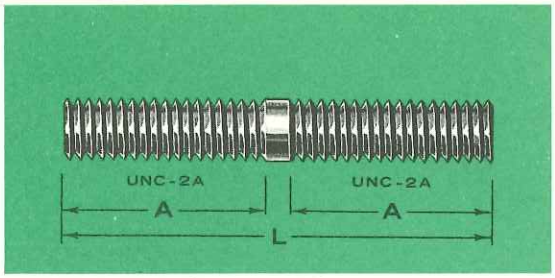
Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Bolt Size	Length	Width	Thick-ness	Ship. Wgt. Per Doz.
12001	25-P38	2.85	5/16 or 3/8	2½	1″	½	3 Lbs.
12002	40-P38	3.80	5/16 or 3/8	4″	1″	5/8	5½ Lbs.
12003	60-P38	4.45	5/16 or 3/8	6″	1⅛	¾	12 Lbs.
12004	25-P12	2.90	½	2½	1⅛	½	3 Lbs.
12005	40-P12	3.95	½	4″	1¼	¾	10 Lbs.
12006	60-P12	4.75	½	6″	1¼	⅞	18 Lbs.
12007	25-P58	3.15	5/8	2½	1¼	5/8	4½ Lbs.
12008	40-P58	4.05	5/8	4″	1½	¾	10 Lbs.
12009	60-P58	4.85	5/8	6″	1½	⅞	18½ Lbs.
12010	40-P34	4.45	¾	4″	1½	¾	9½ Lbs.
12011	60-P34	5.00	¾	6″	1½	1″	20½ Lbs.
12012	80-P34	6.35	¾	8″	1¾	1⅛	40 Lbs.
12013	60-P10	8.05	⅞ or 1″	6″	2″	1¼	33 Lbs.
12014	80-P10	11.80	⅞ or 1″	8″	2″	1⅜	54 Lbs.
12015	10-P10	14.30	⅞ or 1″	10″	2″	1½	78 Lbs.



ORDER FROM YOUR LOCAL DISTRIBUTOR–SEE PAGE 23

Northwestern CLAMPING STUDS



Stressproof Steel

Packaged 12 To a Box

SPECIAL STUDS AVAILABLE

SPECIAL STUDS—Same price as standard plus a $5.00 set-up charge for each diam.
EXTRA LONG STUDS— ¼" thru ½" diam. Add .05 per inch or fraction thereof.
⅝" and ¾" diam. Add .10 per inch or fraction thereof.
⅞" and 1" diam. Add .15 per inch or fraction thereof.
Plus a $5.00 set-up charge for each diameter. Quantity discounts apply.
There is no discount on the set-up charge.

**Tensile Strength is 125,000 Min. P.S.I. Brinell is 225.
Yield is 100,000 Min. P.S.I. Elongation is 10% in 2".
Machinability is 80% of B-1112. Rockwell is 25C.**

THREAD SIZE

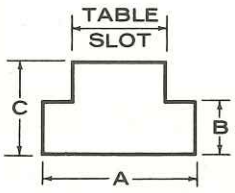
Length L	¼-20 Part No.	¼-20 Price Each	5/16-18 Part No.	5/16-18 Price Each	⅜-16 Part No.	⅜-16 Price Each	7/16-14 Part No.	7/16-14 Price Each	½-13 Part No.	½-13 Price Each	⅝-11 Part No.	⅝-11 Price Each	¾-10 Part No.	¾-10 Price Each	⅞-9 Part No.	⅞-9 Price Each	1"-8 Part No.	1"-8 Price Each
STANDARD SIZES	A-1"		A-1⅛		A-1¼		A-1½		A-1½		A-1¾		A-2"		A-2¼		A-2½	
1½	38001	.24	38101	.26	38201	.28	38301	.30	38401	.38	38501	.46						
2	*38002	.24	*38102	.26	*38202	.28	38302	.30	*38402	.38	38502	.46						
2½	*38003	.26	*38103	.28	*38203	.30	38303	.32	*38403	.40	38503	.46						
3	*38004	.26	*38104	.28	*38204	.30	38304	.32	*38404	.40	*38504	.48	*38601	.50	38701	.60	38801	.65
3½	*38005	.28	*38105	.30	*38205	.32	38305	.34	*38405	.42	*38505	.48	*38602	.53	38702	.63	38802	.68
4	*38006	.28	*38106	.30	*38206	.32	38306	.36	*38406	.42	*38506	.48	*38603	.55	38703	.65	38803	.70
4½	38007	.30	38107	.32	*38207	.34	38307	.38	*38407	.44	*38507	.50	*38604	.58	38704	.68	38804	.75
5	38008	.30	38108	.32	*38208	.34	38308	.40	*38408	.44	*38508	.50	*38605	.60	38705	.70	38805	.80
5½	38009	.32	38109	.34	*38209	.36	38309	.42	*38409	.46	*38509	.52	*38606	.63	38706	.75	38806	.85
6	38010	.32	38110	.34	*38210	.36	38310	.44	*38410	.46	*38510	.52	*38607	.65	38707	.80	38807	.90
6½	38011	.34	38111	.36	38211	.38	38311	.46	38411	.48	*38511	.54	*38608	.68	38708	.83	38808	.95
7	38012	.34	38112	.36	38212	.38	38312	.46	38412	.48	*38512	.54	*38609	.70	38709	.85	38809	1.00
7½	38013	.36	38113	.38	38213	.40	38313	.48	38413	.50	*38513	.56	*38610	.73	38710	.88	38810	1.05
8	38014	.36	38114	.38	38214	.40	38314	.48	38414	.50	*38514	.56	*38611	.75	38711	.90	38811	1.10
LONG SIZES									A-2"		A-2"		A-2"		A-2¼		A-2½	
9									38415	.75	38515	.85	38612	1.00	38712	1.15	38812	1.40
10									38416	.80	38516	.95	38613	1.10	38713	1.30	38813	1.55
12									38417	.90	38517	1.05	38614	1.25	38714	1.55	38814	1.80
14									38418	1.00	38518	1.15	38615	1.40	38715	1.80	38815	2.05
16													38616	1.55	38716	2.05	38816	2.30
18													38617	1.75	38717	2.35	38817	2.60
20													38618	1.95	38718	2.65	38818	2.90

*Conform To NIJFCM Standards

Studs too short for given thread lengths, are threaded as close to center as practical.

T-SLOT NUTS

Heat Treated Steel
Black Pentrate Finish



Packaged 12 To a Box

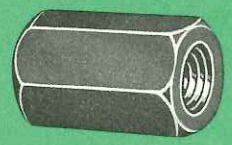
Part No.	Cat. No.	Price Each	Table Slot	Thread Size	A	B	C	Length	Ship. Wgt. Per Doz.
47001	375-TN	.50	⅜	⅜-18	⅝	3/16	½	⅞	1 Lb.
*47002	437-TN	.55	7/16	⅜-16	11/16	7/32	½	⅞	1 Lb.
*47003	500-TN	.55	½	⅜-16	⅞	9/32	½	⅞	1 Lb.
47004	560-TN	.60	9/16	⅜-16	⅞	11/32	⅝	1⅛	1½ Lbs.
*47005	562-TN	.60	9/16	½-13	⅞	11/32	⅝	1⅛	1½ Lbs.
*47006	625-TN	.65	⅝	½-13	1"	11/32	⅝	1⅛	2 Lbs.
*47007	680-TN	.70	11/16	½-13	1⅛	7/16	¾	1¼	2½ Lbs.
*47008	687-TN	.70	11/16	⅝-11	1⅛	7/16	¾	1¼	2½ Lbs.
*47009	750-TN	.75	¾	⅝-11	1¼	15/32	¾	1¼	3 Lbs.
*47010	800-TN	.90	13/16	⅝-11	1¼	9/16	1"	1½	5 Lbs.
*47011	812-TN	.95	13/16	¾-10	1¼	9/16	1"	1½	4½ Lbs.
*47012	875-TN	1.00	⅞	¾-10	1½	9/16	1"	1½	5 Lbs.
*47013	102-TN	1.60	1"	¾-10	1⅝	⅝	1"	1¾	7 Lbs.
47014	100-TN	1.65	1"	⅞-9	1⅝	⅝	1"	1¾	6½ Lbs.
*47015	1060-TN	1.80	1⅛	¾-10	1⅝	11/16	1⅛	2"	9½ Lbs.
47016	1062-TN	1.90	1⅛	1"-8	1⅝	11/16	1⅛	2"	8½ Lbs.

An imperfect thread is left in the T-Nut base to eliminate any danger of screwing the stud through the T-Nut and damaging the table slot.

*Conform To NIJFCM Standards

Northwestern COUPLING NUTS

Packaged 12 To a Box



Heat Treated Steel
Black Pentrate Finish

Part No.	Cat. No.	Price Each	Thread Size	Hex Size	Length	Ship. Wgt. Per Doz.
13001	14-CN	.40	1/4-20	1/2	5/8	1/2 Lb.
13002	56-CN	.45	5/16-18	9/16	7/8	1 Lb.
*13003	38-CN	.50	3/8-16	11/16	1"	1 1/2 Lbs.
13004	76-CN	.55	7/16-14	3/4	1 1/4	2 Lbs.
*13005	12-CN	.70	1/2-13	7/8	1 1/4	2 1/2 Lbs.
*13006	58-CN	.85	5/8-11	1 1/16	1 5/8	4 1/2 Lbs.
*13007	34-CN	1.05	3/4-10	1 1/4	1 7/8	6 1/2 Lbs.
13008	78-CN	1.40	7/8-9	1 7/16	2 1/4	11 Lbs.
13009	10-CN	2.00	1"-8	1 5/8	2 1/2	15 Lbs.

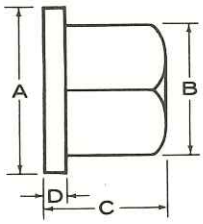
*Conform to NIJFCM Standards

IF YOU DON'T HAVE AN AMPLE SUPPLY OF THESE ITEMS IN YOUR PLANT, COSTLY MAN-HOURS ARE BEING WASTED! HOW LONG HAS IT BEEN SINCE YOU CHECKED?

FLANGED NUTS

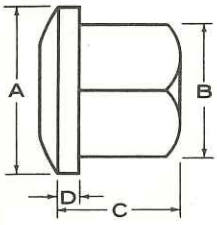
Packaged 12 To a Box

Heat Treated Steel
Black Pentrate Finish



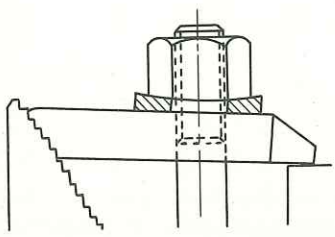
Part No.	Cat. No.	Price Each	Thread Size	A	B	C	D	Shp Wgt. Per Doz.
			NATIONAL COARSE					
*15001	14-FN	.40	1/4 - 20	5/8	1/2	5/16	3/32	1/4 Lb.
*15002	56-FN	.45	5/16 - 18	3/4	9/16	3/8	3/32	1/2 Lb.
*15003	38-FN	.45	3/8 - 16	7/8	11/16	1/2	1/8	1 Lb.
15004	76-FN	.50	7/16 - 14	1"	3/4	9/16	5/32	1 Lb.
*15005	12-FN	.55	1/2 - 13	1 1/8	7/8	11/16	5/32	1 1/2 Lbs.
*15006	58-FN	.65	5/8 - 11	1 3/8	1 1/16	13/16	3/16	2 1/2 Lbs.
*15007	34-FN	.90	3/4 - 10	1 5/8	1 1/4	1"	1/4	4 Lbs.
*15008	78-FN	1.25	7/8 - 9	1 3/4	1 7/16	1 1/8	1/4	6 Lbs.
*15009	10-FN	1.45	1" - 8	2"	1 5/8	1 1/4	1/4	8 Lbs.
			NATIONAL FINE					
15101	14-NFN	.50	1/4 - 28	5/8	1/2	5/16	3/32	1/4 Lb.
15102	56-NFN	.55	5/16 - 24	3/4	9/16	3/8	3/32	1/2 Lb.
15103	38-NFN	.60	3/8 - 24	7/8	11/16	1/2	1/8	1 Lb.
15104	76-NFN	.70	7/16 - 20	1"	3/4	9/16	5/32	1 Lb.
15105	12-NFN	.70	1/2 - 20	1 1/8	7/8	11/16	5/32	1 1/2 Lbs.
15106	58-NFN	.80	5/8 - 18	1 3/8	1 1/16	13/16	3/16	2 1/2 Lbs.
15107	34-NFN	1.05	3/4 - 16	1 5/8	1 1/4	1"	1/4	4 Lbs.
15108	78-NFN	1.25	7/8 - 14	1 3/4	1 7/16	1 1/8	1/4	6 Lbs.
15109	10-NFN	1.45	1" - 14	2"	1 5/8	1 1/4	1/4	8 Lbs.
			☐ SPHERICAL					
*15201	14-SFN	.65	1/4 - 20	5/8	1/2	5/16	3/32	1/4 Lb.
*15202	56-SFN	.70	5/16 - 18	3/4	9/16	3/8	3/32	1/2 Lb.
*15203	38-SFN	.70	3/8 - 16	7/8	11/16	1/2	1/8	1 Lb.
15204	76-SFN	.80	7/16 - 14	1"	3/4	9/16	5/32	1 Lb.
*15205	12-SFN	.80	1/2 - 13	1 1/8	7/8	11/16	5/32	1 1/2 Lbs.
*15206	58-SFN	1.00	5/8 - 11	1 3/8	1 1/16	13/16	3/16	2 1/2 Lbs.
*15207	34-SFN	1.30	3/4 - 10	1 5/8	1 1/4	1"	1/4	4 1/2 Lbs.
*15208	78-SFN	1.60	7/8 - 9	1 3/4	1 7/16	1 1/8	1/4	6 Lbs.
*15209	10-SFN	1.90	1" - 8	2"	1 5/8	1 1/4	1/4	8 1/2 Lbs.

Heat Treated Steel
Black Pentrate Finish



* Conform to NIJFCM Standards
☐ Work with Lower Half of Spherical Washer of Same Size.
See page 14.

Heat Treated Steel
Black Pentrate Finish



			TOGGLE TYPE					
15301	14-TFN	.90	1/4 - 20	5/8	7/16	3/8	5/32	1/4 Lb.
15302	56-TFN	1.00	5/16 - 18	3/4	9/16	7/16	3/16	1/2 Lb.
15303	38-TFN	1.15	3/8 - 16	7/8	11/16	1/2	7/32	1 Lb.
15304	76-TFN	1.20	7/16 - 14	1"	3/4	9/16	1/4	1 Lb.
15305	12-TFN	1.25	1/2 - 13	1 1/8	7/8	11/16	1/4	1 1/2 Lbs.
15306	58-TFN	1.50	5/8 - 11	1 3/8	1 1/16	13/16	9/32	2 1/2 Lbs.
15307	34-TFN	1.90	3/4 - 10	1 5/8	1 1/4	1"	3/8	4 Lbs.
15308	78-TFN	2.35	7/8 - 9	1 3/4	1 3/8	1 1/8	3/8	5 Lbs.
15309	10-TFN	2.75	1" - 8	2"	1 1/2	1 1/4	13/32	6 1/2 Lbs.

The concave-convex surfaces of Northwestern's Toggle Flanged Nuts allow adjustments to 1½° in all directions, corrects misaligned parts and eliminates undue stress on threaded members.

Northwestern TOGGLE SHOE CLAMPS

WITH HAND KNOB

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Thread	* Overall Thread	Overall Length	Knob O.D.	Ship. Wgt. Per Doz.
44001	K141	1.15	¼-20	1″	1¾	1″	1 Lb.
44002	K142	1.25	¼-20	1¾	2½	1″	1½ Lbs.
44003	K143	1.35	¼-20	2½	3¼	1″	1½ Lbs.
44004	K144	1.45	¼-20	3¼	4″	1″	1½ Lbs.
44005	K561	1.20	5/16-18	1¼	2⅛	1½	2 Lbs.
44006	K562	1.30	5/16-18	2″	2⅞	1½	2½ Lbs.
44007	K563	1.40	5/16-18	2¾	3⅝	1½	2½ Lbs.
44008	K564	1.50	5/16-18	3½	4⅜	1½	2½ Lbs.
44009	K381	1.35	⅜-16	1¼	2¼	2″	3½ Lbs.
44010	K382	1.50	⅜-16	2″	3″	2″	3½ Lbs.
44011	K383	1.65	⅜-16	2¾	3¾	2″	4 Lbs.
44012	K384	1.80	⅜-16	3½	4½	2″	4 Lbs.
44013	K385	1.95	⅜-16	4¼	5¼	2″	4 Lbs.
44014	K121	1.60	½-13	2″	3⅛	2½	6 Lbs.
44015	K122	1.75	½-13	2¾	3⅞	2½	6½ Lbs.
44016	K123	1.90	½-13	3½	4⅝	2½	7 Lbs.
44017	K124	2.05	½-13	4¼	5⅜	2½	7½ Lbs.
44018	K125	2.20	½-13	5″	6⅛	2½	8 Lbs.
44019	K581	1.85	⅝-11	2¼	3½	3″	10 Lbs.
44020	K582	2.00	⅝-11	3″	4¼	3″	11 Lbs.
44021	K583	2.15	⅝-11	3¾	5″	3″	12 Lbs.
44022	K584	2.30	⅝-11	4½	5¾	3″	12½ Lbs.
44023	K585	2.45	⅝-11	5¼	6½	3″	13 Lbs.

*"Overall Thread" is From the End of Clamp to the Last Thread

WITH KNURLED HEAD

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Thread	* Overall Thread	Overall Length	Knurled Head	Ship. Wgt. Per Doz.
44101	H141	.95	¼-20	1⅜	1¾	11/16 O.D. x 7/32	½ Lb.
44102	H142	1.05	¼-20	2⅛	2½	11/16 O.D. x 7/32	1 Lb.
44103	H143	1.15	¼-20	2⅞	3¼	11/16 O.D. x 7/32	1 Lb.
44104	H144	1.25	¼-20	3⅝	4″	11/16 O.D. x 7/32	1 Lb.
44105	H561	1.00	5/16-18	1⅝	2⅛	¾ O.D. x ¼	1 Lb.
44106	H562	1.10	5/16-18	2⅜	2⅞	¾ O.D. x ¼	1 Lb.
44107	H563	1.20	5/16-18	3⅛	3⅝	¾ O.D. x ¼	1½ Lbs.
44108	H564	1.30	5/16-18	3½	4⅜	¾ O.D. x ¼	1½ Lbs.
44109	H381	1.10	⅜-16	1¾	2¼	⅞ O.D. x 5/16	1½ Lbs.
44110	H382	1.25	⅜-16	2½	3″	⅞ O.D. x 5/16	1½ Lbs.
44111	H383	1.40	⅜-16	2¾	3¾	⅞ O.D. x 5/16	2 Lbs.
44112	H384	1.55	⅜-16	4″	4½	⅞ O.D. x 5/16	2 Lbs.
44113	H385	1.70	⅜-16	4¼	5¼	⅞ O.D. x 5/16	2½ Lbs.
44114	H121	1.25	½-13	2½	3⅛	1″ O.D. x ⅜	2½ Lbs.
44115	H122	1.40	½-13	3¼	3⅞	1″ O.D. x ⅜	3 Lbs.
44116	H123	1.55	½-13	4″	4⅝	1″ O.D. x ⅜	3½ Lbs.
44117	H124	1.70	½-13	4¼	5⅜	1″ O.D. x ⅜	4 Lbs.
44118	H125	1.85	½-13	5½	6⅛	1″ O.D. x ⅜	4 Lbs.
44119	H581	1.45	⅝-11	2¼	3½	1⅛ O.D. x 7/16	4 Lbs.
44120	H582	1.60	⅝-11	3″	4¼	1⅛ O.D. x 7/16	4½ Lbs.
44121	H583	1.75	⅝-11	3¾	5″	1⅛ O.D. x 7/16	5½ Lbs.
44122	H584	1.90	⅝-11	5″	5¾	1⅛ O.D. x 7/16	6 Lbs.
44123	H585	2.05	⅝-11	5¾	6½	1⅛ O.D. x 7/16	6½ Lbs.

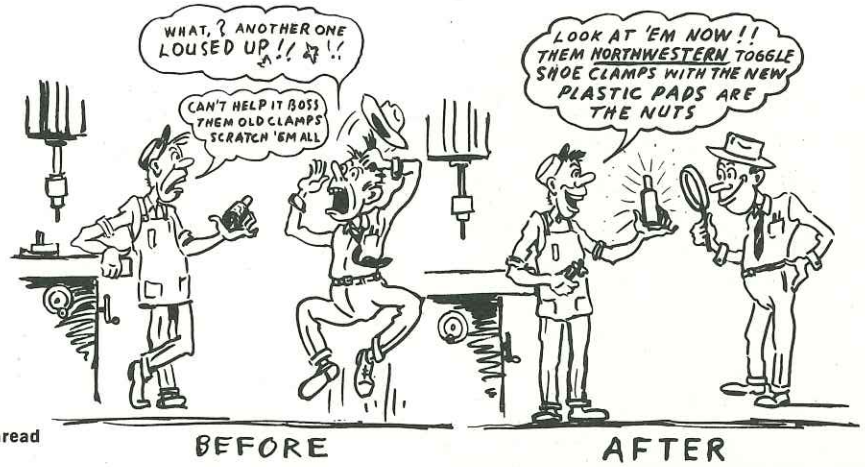
*"Overall Thread" is From the End of Clamp to the Last Thread

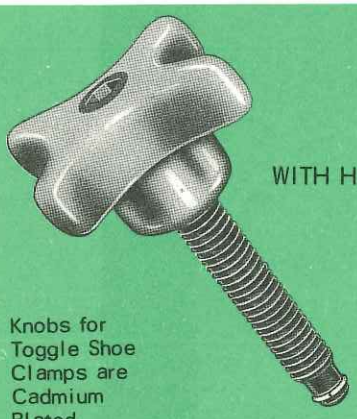
WITH SOCKET

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Thread	* Overall Thread	Overall Length	Ship. Wgt. Per Doz.
44201	141	.75	¼-20	1⅜	1¾	¼ Lb.
44202	142	.85	¼-20	2⅛	2½	½ Lb.
44203	143	.95	¼-20	2⅞	3¼	½ Lb.
44204	144	1.05	¼-20	3⅝	4″	1 Lb.
44205	561	.80	5/16-18	1⅝	2⅛	½ Lb.
44206	562	.90	5/16-18	2⅜	2⅞	1 Lb.
44207	563	1.00	5/16-18	3⅛	3⅝	1 Lb.
44208	564	1.10	5/16-18	3½	4⅜	1 Lb.
44209	381	.85	⅜-16	1¾	2¼	1 Lb.
44210	382	1.00	⅜-16	2½	3″	1 Lb.
44211	383	1.15	⅜-16	2¾	3¾	1½ Lbs.
44212	384	1.30	⅜-16	4″	4½	1½ Lbs.
44213	385	1.45	⅜-16	4¼	5¼	2 Lbs.
44214	121	.95	½-13	2½	3⅛	2 Lbs.
44215	122	1.10	½-13	3¼	3⅞	2½ Lbs.
44216	123	1.25	½-13	4″	4⅝	2½ Lbs.
44217	124	1.40	½-13	4¼	5⅜	3 Lbs.
44218	125	1.55	½-13	5½	6⅛	3½ Lbs.
44219	581	1.05	⅝-11	2¼	3½	3 Lbs.
44220	582	1.20	⅝-11	3″	4¼	3½ Lbs.
44221	583	1.35	⅝-11	3¾	5″	4½ Lbs.
44222	584	1.50	⅝-11	5″	5¾	5 Lbs.
44223	585	1.65	⅝-11	5¾	6½	5½ Lbs.

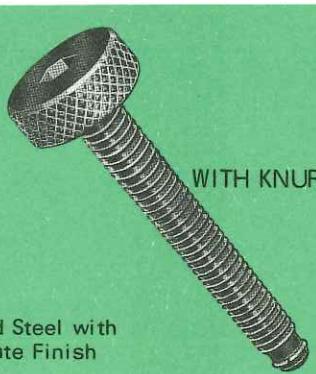
*"Overall Thread" is From the End of Clamp to the Last Thread


WHAT, ? ANOTHER ONE LOUSED UP !! ☆ !!
CAN'T HELP IT BOSS THEM OLD CLAMPS SCRATCH 'EM ALL
LOOK AT 'EM NOW !! THEM NORTHWESTERN TOGGLE SHOE CLAMPS WITH THE NEW PLASTIC PADS ARE THE NUTS
BEFORE
AFTER



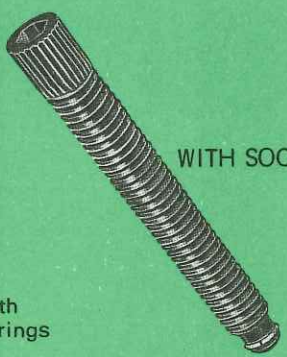
WITH HAND KNOB

Knobs for Toggle Shoe Clamps are Cadmium Plated



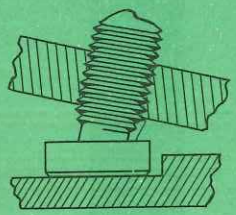
WITH KNURLED HEAD

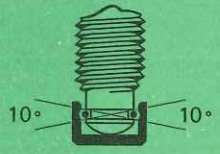
Heat Treated Steel with Black Pentrate Finish



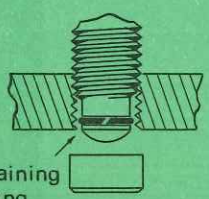
WITH SOCKET

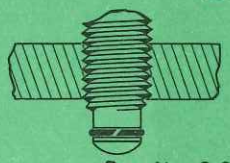
Complete with Retaining Springs





Shoes Adjust Themselves Up to 10° in any Direction





Pat. No. 2,845,828

Simple Quick Assembly Snap on-Snap off

Northwestern SHOES AND V-PADS

STEEL SHOES

STANDARD SHOES

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Use With	Size	Ship. Wgt. Per Doz.
45201	S-14	.35	141-2-3-4	5/16 O.D. x 3/16	1/4 Lb.
45202	S-56	.40	561-2-3-4	3/8 O.D. x 7/32	1/4 Lb.
45203	S-38	.45	381-2-3-4-5	7/16 O.D. x 1/4	1/4 Lb.
45204	S-12	.50	121-2-3-4-5	9/16 O.D. x 5/16	1/4 Lb.
45205	S-58	.55	581-2-3-4-5	11/16 O.D. x 13/32	1/2 Lb.

LARGE SHOES

Part No.	Cat. No.	Price Each	Use With	Size	Ship. Wgt. Per Doz.
45301	LS-14	.45	141-2-3-4	5/8 O.D. x 7/32	1/4 Lb.
45302	LS-56	.50	561-2-3-4	11/16 O.D. x 1/4	1/2 Lb.
45303	LS-38	.55	381-2-3-4-5	3/4 O.D. x 9/32	1/2 Lb.
45304	LS-12	.60	121-2-3-4-5	7/8 O.D. x 3/8	1 Lb.
45305	LS-58	.65	581-2-3-4-5	1" O.D. x 7/16	1 Lb.

NYLON SHOES

STANDARD SHOES

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Use With	Size	Max. Load Pounds	Ship. Wgt. Per Doz.
45001	NS-14	.35	141-2-3-4	5/16 O.D. x 3/16	360	1/4 Lb.
45002	NS-56	.40	561-2-3-4	3/8 O.D. x 7/32	380	1/4 Lb.
45003	NS-38	.45	381-2-3-4-5	7/16 O.D. x 1/4	500	1/4 Lb.
45004	NS-12	.50	121-2-3-4-5	9/16 O.D. x 5/16	600	1/4 Lb.
45005	NS-58	.55	581-2-3-4-5	11/16 O.D. x 13/32	1120	1/4 Lb.

LARGE SHOES

Part No.	Cat. No.	Price Each	Use With	Size	Max. Load Pounds	Ship. Wgt. Per Doz.
45101	LNS-14	.45	141-2-3-4	5/8 O.D. x 7/32	360	1/4 Lb.
45102	LNS-56	.50	561-2-3-4	11/16 O.D. x 1/4	380	1/4 Lb.
45103	LNS-38	.55	381-2-3-4-5	3/4 O.D. x 9/32	500	1/4 Lb.
45104	LNS-12	.60	121-2-3-4-5	7/8 O.D. x 3/8	600	1/2 Lb.
45105	LNS-58	.65	581-2-3-4-5	1" O.D. x 7/16	1120	1/2 Lb.

V-PADS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Use With	Thickness	Width	Length	Ship. Wgt. Per Doz.
46001	14VP10	1.50	141-2-3-4	5/16	1"	7/8	1 Lb.
46002	14VP20	2.00	141-2-3-4	5/16	2"	1 5/16	2 1/2 Lbs.
46003	56VP10	1.75	561-2-3-4	3/8	1"	15/16	1 Lb.
46004	56VP20	2.25	561-2-3-4	3/8	2"	1 3/8	3 Lbs.
46005	38VP10	2.00	381-2-3-4-5	7/16	1"	1"	1 1/2 Lbs.
46006	38VP20	2.50	381-2-3-4-5	7/16	2"	1 7/16	3 1/2 Lbs.
46007	38VP30	3.00	381-2-3-4-5	7/16	3"	1 15/16	6 1/2 Lbs.

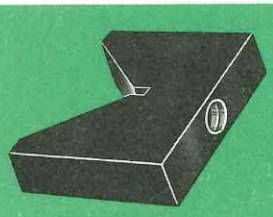
Pat. No. 2,845,828

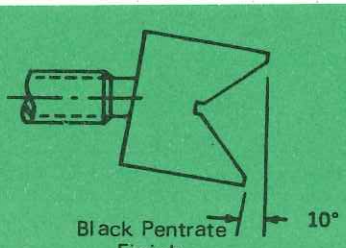
V-PADS ARE MADE OF MILD STEEL NOT HEAT TREATED. THEY MAY BE DRILLED, TAPPED, OR COUNTER-BORED FOR USE AS SOLID LOCATORS.

•

EXAMPLE OF TWO V-PADS USED AS SOLID LOCATORS AND ONE USED AS ADJUSTABLE CLAMP.

SHOES AND V-PADS ARE INTER-CHANGEABLE WITH ALL THREE TYPES OF TOGGLE SHOE CLAMPS.



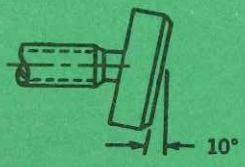


STEEL

STANDARD

Heat Treated Steel
Black Pentrate Finish

LARGE

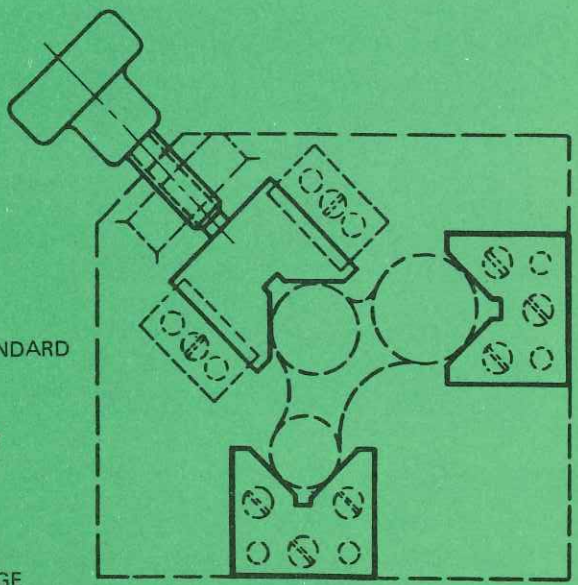


NYLON PLASTIC

STANDARD

Nylon Plastic Cannot Mar or Scratch

LARGE



Northwestern WASHERS

FLAT WASHERS

Heat Treated Steel
Black Pentrate Finish

Packaged 12 To a Box

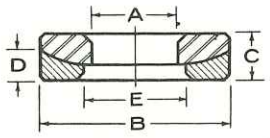
Part No.	Cat. No.	Price Each	Hole Diam.	O.D.	Thick-ness	Ship. Wgt. Per Doz.
16001	14-FW	.12	17/64	5/8	3/32	1/4 Lb.
16002	56-FW	.14	21/64	3/4	3/32	1/4 Lb.
16003	38-FW	.16	25/64	7/8	1/8	1/4 Lb.
16004	76-FW	.18	15/32	1"	1/8	1/2 Lb.
16005	12-FW	.20	17/32	1 1/8	1/8	1/2 Lb.
16006	58-FW	.23	21/32	1 1/4	1/8	1/2 Lb.
16007	34-FW	.29	25/32	1 1/2	5/32	1 Lb.
16008	78-FW	.40	29/32	1 3/4	5/32	1 Lb.
16009	10-FW	.50	1 1/32	2"	3/16	1 1/2 Lbs.

Standard Jig and
Fixture Components
Cut Tooling Costs

SPHERICAL WASHERS

(SELF-ALIGNING)

Heat Treated Steel
Black Pentrate Finish



One Set Is Two Pieces
Lower Half Works with Spherical Flanged Nuts of the Same Size—Cost Is 1/2 of Price Per Set

Packaged 12 To a Box

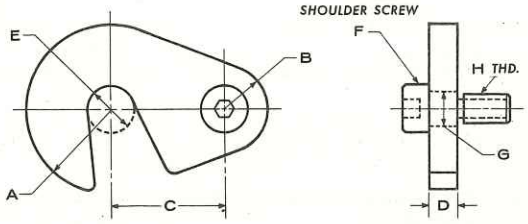
Part No.	Cat. No.	Price Each	A	B	C	D	E	Shp Wgt. Per Doz.
*32001	14-SW	.45	9/32	5/8	3/16	1/8	5/16	1/4 Lb.
*32002	56-SW	.55	11/32	7/8	1/4	5/32	3/8	1/2 Lb.
*32003	38-SW	.65	13/32	1"	1/4	5/32	7/16	1 Lb.
32004	76-SW	.75	15/32	1 1/8	5/16	7/32	1/2	1 Lb.
*32005	12-SW	.85	17/32	1 3/16	5/16	7/32	9/16	1 1/2 Lbs.
*32006	58-SW	1.15	21/32	1 3/8	5/16	7/32	11/16	1 1/2 Lbs.
*32007	34-SW	1.35	25/32	1 5/8	3/8	9/32	13/16	2 1/2 Lbs.
*32008	78-SW	1.85	15/16	1 7/8	3/8	1/4	1"	3 Lbs.
*32009	10-SW	2.15	1 1/16	2"	1/2	5/16	1 1/8	3 1/2 Lbs.

*Conform to NIJFCM Standards

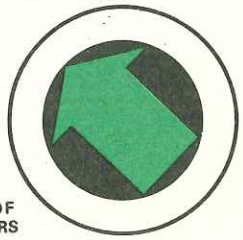
SWING "C" WASHERS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	E	F	G	H	Shp. Wgt. Per Doz.
			COMPLETE WITH SHOULDER SCREWS								
39001	SCW-1	2.20	3/4	3/8	1"	1/4	13/32	1	3/8	5/16 - 18	2 Lbs.
39002	SCW-2	2.50	1"	1/2	1 1/4	3/8	17/32	2	3/8	5/16 - 18	4 Lbs.
39003	SCW-3	3.00	1 1/8	9/16	1 1/2	3/8	21/32	3	1/2	3/8 - 16	6 Lbs.
39004	SCW-4	4.00	1 1/4	5/8	1 3/4	1/2	25/32	4	1/2	3/8 - 16	10 Lbs.



Made of low carbon steel, carburized, hardened, ground, and rust proofed. These items are used as a latch in the construction of jigs, fixtures, and special machinery. They are generally used for end locations, and can be swung out of the way so that the part may be inserted and removed quickly.



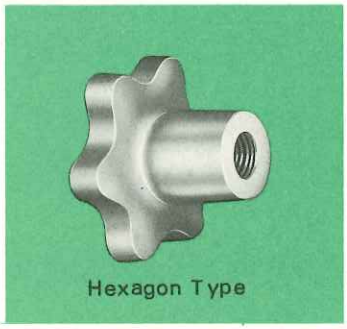
SYMBOL OF
TIME SAVERS

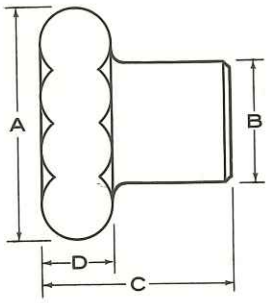
CAST IRON HAND KNOBS

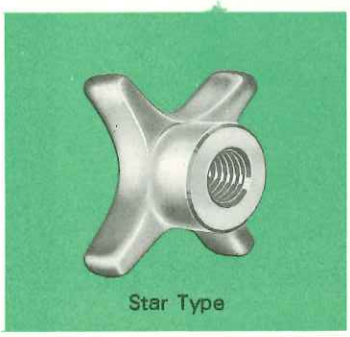
Tapped and Reamed Knobs are Cadmium Plated
Plain Knobs are Centered
Packaged 12 To a Box

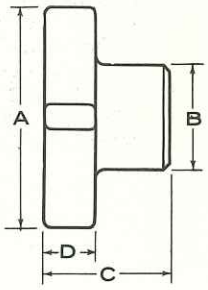
	PLAIN				TAPPED						REAMED						OUTSIDE DIMENSIONS			
	Part No.	Cat. No.	Price Each	Shp. Wgt. Per Doz.	Part No.	Cat. No.	Price Each	Thread Size	Thread Depth	Shp. Wgt. Per Doz.	Part No.	Cat. No.	Price Each	Hole Size	Hole Depth	Ship. Wgt. Per Doz.	A	B	C	D
Star Type	*17301	HK-1	.25	1 Lb.	17501	HK-1T	.55	1/4 - 20	Thru	1 Lb.	17401	HK-1R	.45	1/4	Thru	1 Lb.	1 1/8	9/16	5/8	5/16
					*17502	HK-1TB	.60	1/4 - 20	7/16	1 Lb.	*17402	HK-1RB	.50	1/4	7/16	1 Lb.	1 1/8	9/16	5/8	5/16
	*17302	HK-2	.30	2 Lbs.	17503	HK-2T	.60	5/16 - 18	Thru	1 1/2 Lbs.	17403	HK-2R	.55	5/16	Thru	1 1/2 Lbs.	1 1/2	11/16	7/8	3/8
					*17504	HK-2TB	.65	5/16 - 18	5/8	1 1/2 Lbs.	*17404	HK-2RB	.60	5/16	5/8	1 1/2 Lbs.	1 1/2	11/16	7/8	3/8
	17303	HK-3	.35	3 Lbs.	17505	HK-3T	.70	3/8 - 16	Thru	3 Lbs.	17405	HK-3R	.65	3/8	Thru	3 Lbs.	2"	13/16	1"	1/2
	*17304	HK-30	.40	3 Lbs.	*17506	HK-30T	.75	3/8 - 16	3/4	3 Lbs.	*17406	HK-30R	.70	3/8	3/4	3 Lbs.	2"	3/4	1 1/8	1/2
	17305	HK-4	.45	5 1/2 Lbs.	17507	HK-4T	.80	1/2 - 13	Thru	4 1/2 Lbs.	17407	HK-4R	.75	1/2	Thru	4 1/2 Lbs.	2 1/2	1"	1 1/8	9/16
	*17306	HK-40	.60	7 1/2 Lbs.	*17508	HK-40T	.95	1/2 - 13	1"	6 1/2 Lbs.	*17408	HK-40R	.85	1/2	1"	6 1/2 Lbs.	2 1/2	1 1/8	1 1/2	1/2
					*17509	HK-40TL	1.00	5/8 - 11	1"	6 1/2 Lbs.	*17409	HK-40RL	.90	5/8	1"	6 1/2 Lbs.	2 1/2	1 1/8	1 1/2	1/2
	17307	HK-5	.65	8 1/2 Lbs.	17510	HK-5T	1.00	5/8 - 11	Thru	7 1/2 Lbs.	17410	HK-5R	.95	5/8	Thru	7 1/2 Lbs.	3"	1 1/4	1 1/4	5/8
	*17308	HK-50	.80	10 1/2 Lbs.	*17511	HK-50T	1.20	5/8 - 11	1 1/8	9 1/2 Lbs.	*17411	HK-50R	1.15	5/8	1 1/8	9 1/2 Lbs.	3"	1 1/4	1 3/4	1/2
					*17512	HK-50TL	1.30	3/4 - 10	1 1/8	9 Lbs.	*17412	HK-50RL	1.25	3/4	1 1/8	9 Lbs.	3"	1 1/4	1 3/4	1/2
Hexagon Type	17309	HK-6	.40	5 Lbs.	17513	HK-6T	.85	3/8 - 16	1"	4 1/2 Lbs.	17413	HK-6R	.75	3/8	1"	4 1/2 Lbs.	2"	7/8	1 5/8	3/8
	17310	HK-7	.55	8 Lbs.	17514	HK-7T	.95	1/2 - 13	1 1/8	7 1/2 Lbs.	17414	HK-7R	.90	1/2	1 1/8	7 1/2 Lbs.	2 1/2	1"	1 7/8	7/16
	17311	HK-8	.75	13 1/2 Lbs.	17515	HK-8T	1.10	5/8 - 11	1 1/8	12 1/2 Lbs.	17415	HK-8R	1.05	5/8	1 1/8	12 Lbs.	3"	1 1/4	2"	1/2
					17516	HK-9T	1.15	3/4 - 10	1 1/8	11 1/2 Lbs.	17416	HK-9R	1.15	3/4	1 1/8	11 1/2 Lbs.	3"	1 1/4	2"	1/2

*Conform To NIJFCM Standards









ALUMINUM HANDKNOBS

Plain Knobs are Centered

Packaged 12 To a Box

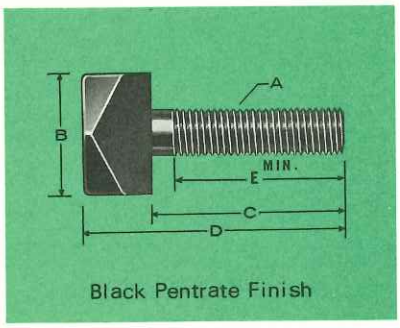
	PLAIN				TAPPED						REAMED						OUTSIDE DIMENSIONS			
	Part No.	Cat. No.	Price Each	Shp. Wgt. Per Doz.	Part No.	Cat. No.	Price Each	Thread Size	Thread Depth	Shp. Wgt. Per Doz.	Part No.	Cat. No.	Price Each	Hole Size	Hole Depth	Shp. Wgt. Per Doz.	A	B	C	D
Star Type	*17001	AHK-1	.25	1/2 Lb.	17201	AHK-1T	.45	1/4 - 20	Thru	1/2 Lb.	17101	AHK-1R	.45	1/4	Thru	1/2 Lb.	1 1/8	9/16	5/8	5/16
					*17202	AHK-1TB	.50	1/4 - 20	7/16	1/2 Lb.	*17102	AHK-1RB	.50	1/4	7/16	1/2 Lb.	1 1/8	9/16	5/8	5/16
	*17002	AHK-2	.30	1 Lb.	17203	AHK-2T	.55	5/16 - 18	Thru	1 Lb.	17103	AHK-2R	.55	5/16	Thru	1 Lb.	1 1/2	11/16	7/8	3/8
					*17204	AHK-2TB	.65	5/16 - 18	5/8	1 Lb.	*17104	AHK-2RB	.60	5/16	5/8	1 Lb.	1 1/2	11/16	7/8	3/8
	17003	AHK-3	.35	1 Lb.	17205	AHK-3T	.65	3/8 - 16	Thru	1 Lb.	17105	AHK-3R	.65	3/8	Thru	1 Lb.	2"	13/16	1"	1/2
	*17004	AHK-30	.45	1 Lb.	*17206	AHK-30T	.80	3/8 - 16	3/4	1 Lb.	*17106	AHK-30R	.75	3/8	3/4	1 Lb.	2"	3/4	1 1/8	1/2
	17005	AHK-4	.55	2 Lbs.	17207	AHK-4T	.85	1/2 - 13	Thru	2 Lbs.	17107	AHK-4R	.80	1/2	Thru	2 Lbs.	2 1/2	1"	1 1/8	9/16
	*17006	AHK-40	.65	2 1/2 Lbs	*17208	AHK-40T	.95	1/2 - 13	1"	2 1/2 Lbs.	*17108	AHK-40R	.90	1/2	1"	2 1/2 Lbs	2 1/2	1 1/8	1 1/2	1/2
					*17209	AHK-40TL	1.00	5/8 - 11	1"	2 1/2 Lbs.	*17109	AHK-40RL	.95	5/8	1"	2 1/2 Lbs.	2 1/2	1 1/8	1 1/2	1/2
	17007	AHK-5	.70	3 Lbs.	17210	AHK-5T	1.00	5/8 - 11	Thru	3 Lbs.	17110	AHK-5R	.95	5/8	Thru	3 Lbs.	3"	1 1/4	1 1/4	5/8
	*17008	AHK-50	.85	3 1/2 Lbs.	*17211	AHK-50T	1.20	5/8 - 11	1 1/8	3 1/2 Lbs.	*17111	AHK-50R	1.15	5/8	1 1/8	3 1/2 Lbs.	3"	1 1/4	1 3/4	1/2
					*17212	AHK-50TL	1.30	3/4 - 10	1 1/8	3 Lbs.	*17112	AHK-50RL	1.25	3/4	1 1/8	3 Lbs.	3"	1 1/4	1 3/4	1/2
Hexagon Type	17009	AHK-6	.50	2 Lbs.	17213	AHK-6T	.85	3/8 - 16	1"	1 1/2 Lbs.	17113	AHK-6R	.80	3/8	1"	1 1/2 Lbs.	2"	7/8	1 5/8	3/8
	17010	AHK-7	.80	3 Lbs.	17214	AHK-7T	1.15	1/2 - 13	1 1/8	3 Lbs.	17114	AHK-7R	1.10	1/2	1 1/8	2 1/2 Lbs.	2 1/2	1"	1 7/8	7/16
	17011	AHK-8	.95	5 Lbs.	17215	AHK-8T	1.35	5/8 - 11	1 1/8	4 1/2 Lbs.	17115	AHK-8R	1.30	5/8	1 1/8	4 1/2 Lbs.	3"	1 1/4	2"	1/2
					17216	AHK-9T	1.40	3/4 - 10	1 1/8	4 1/2 Lbs.	17116	AHK-9R	1.35	3/4	1 1/8	4 Lbs.	3"	1 1/4	2"	1/2

*Conform To NIJFCM Standards

Everyone Likes the Feel of These Smooth-Finished Knobs

Northwestern JIG & FIXTURE SCREWS

QUARTER TURN



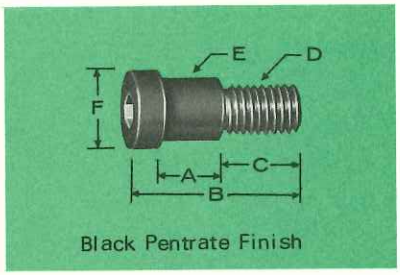
Black Pentrate Finish

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	E	Shp Wgt Per Doz.
*25001	QT-32	.65	10-32	½	1"	1½	⅞	½ Lb.
25002	QT-10	.65	10-24	½	1"	1½	⅞	½ Lb.
*25003	QT-14	.70	¼-20	¾	1¼	1⅞	1"	1 Lb.
*25004	QT-56	.80	5/16-18	1"	1½	2¼	1¼	1 Lb.
*25005	QT-38	.90	⅜-16	1"	1½	2½	1¼	2 Lbs.
*25006	QT-12	1.05	½-13	1¼	1¾	2¾	1½	3½ Lbs.
			LONG TYPE					
25101	LQT-32	.85	10-32	½	1½	2"	1⅜	½ Lb.
25102	LQT-10	.85	10-24	½	1½	2"	1⅜	½ Lb.
25103	LQT-14	.95	¼-20	¾	1¾	2⅜	1½	1 Lb.
25104	LQT-56	1.05	5/16-18	1"	2"	2¾	1¾	1½ Lb.
25105	LQT-38	1.15	⅜-16	1"	2"	3"	1¾	2 Lbs.
25106	LQT-12	1.35	½-13	1¼	2¼	3¼	2"	4 Lbs.

*Conform to NIJFCM Standards

SOCKET SHOULDER

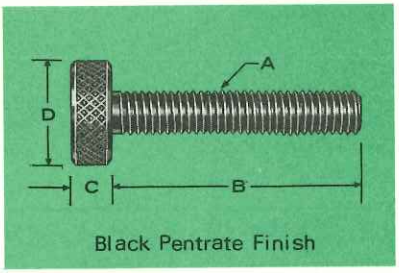


Black Pentrate Finish

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	E	F	Ship. Wgt. Per Doz.
31001	1414	.50	.250	13/16	⅜	¼-20	.374	⅝	½ Lb.
31002	1456	.50	.312	⅞	⅜	¼-20	.374	⅝	½ Lb.
31003	5638	.55	.375	1⅛	½	5/16-18	.499	¾	1 Lb.
31004	3812	.60	.500	1⅜	⅝	⅜-16	.499	¾	1 Lb.
31005	3858	.65	.625	1½	⅝	⅜-16	.499	¾	1 Lb.
31006	3834	.65	.750	1⅝	⅝	⅜-16	.499	¾	1 Lb.

KNURLED HEAD

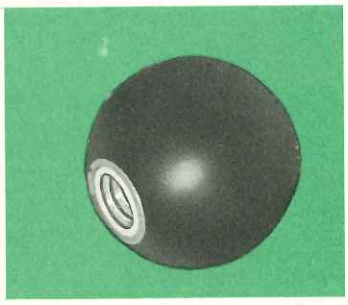


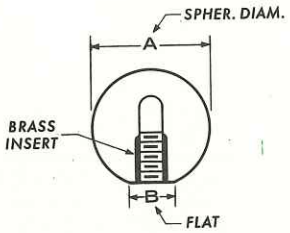
Black Pentrate Finish

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	Ship. Wgt. Per Doz.
20001	400-15	.45	10-24	1½	3/16	⅝	½ Lb.
20002	500-25	.55	¼-20	2½	7/32	1 1/16	1 Lb.
20003	600-3	.65	5/16-18	3"	¼	¾	1 Lb.
20004	700-3	.70	⅜-16	3"	5/16	⅞	1½ Lbs.
20005	800-3	.85	¼-13	3"	⅜	1"	3 Lbs.

PLASTIC BALL KNOBS





These items are furnished with tapped brass inserts. They are used on machine tools, mechanical units, jigs, fixtures and other tooling. They come with a black, buff and polish finish. The material is resistant to electricity, water, oils, and most chemicals.

Packaged 12 To a Box

WITH TAPPED BRASS INSERTS

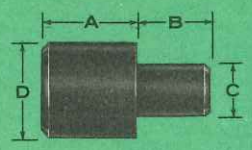
Part No.	Cat. No.	Price Each	Thread Size and Length	A Diam.	B Flat	Ship. Wgt. Per Doz.
23001	PBK-15	.20	10-32 x 5/16	¾	⅜	¼ Lb.
23002	PBK-25	.25	¼-20 x 7/16	1"	½	½ Lb.
23003	PBK-26	.25	¼-28 x 7/16	1"	½	½ Lb.
23004	PBK-27	.25	5/16-18 x 7/16	1"	½	½ Lb.
23005	PBK-28	.25	5/16-24 x 7/16	1"	½	½ Lb.
23006	PBK-45	.30	⅜-16 x ½	1⅜	⅝	1 Lb.
23007	PBK-46	.30	⅜-24 x ½	1⅜	⅝	1 Lb.
23008	PBK-47	.40	½-13 x ⅝	1⅜	⅝	1¼ Lbs.
23009	PBK-48	.40	½-20 x ⅝	1⅜	⅝	1¼ Lbs.
23010	PBK-65	.60	½-13 x ⅞	1⅞	¾	2¼ Lbs.
23011	PBK-66	.60	½-20 x ⅞	1⅞	¾	2¼ Lbs.
23012	PBK-67	.50	*⅝-18 x ¾	1⅞	¾	2 Lbs.

*Moulded Thread

ORDER FROM YOUR LOCAL DISTRIBUTOR–SEE PAGE 23

JIG FEET AND REST BUTTONS

PRESS TYPE

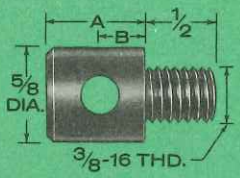


Hardened .020 Deep
Black Pentrate Finish

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	Ship. Wgt. Per Doz.
19101	14-PF	.40	1/4	1/2	.376	5/8	1/2 Lb.
19102	38-PF	.45	3/8	1/2	.376	5/8	1 Lb.
19103	12-PF	.45	1/2	1/2	.376	5/8	1 Lb.
19104	58-PF	.50	5/8	1/2	.376	5/8	1 Lb.
19105	34-PF	.50	3/4	1/2	.376	5/8	1 Lb.
19106	10-PF	.55	1"	1/2	.376	5/8	1 1/2 Lbs.
				SMALL SIZES			
19107	14-BB	.40	1/4	1/2	.251	1/2	1/4 Lb.
19108	38-BB	.40	3/8	1/2	.251	1/2	1/2 Lb.
19109	12-BB	.40	1/2	1/2	.251	1/2	1/2 Lb.
				TINY SIZES			
19110	14-AB	.40	1/4	3/8	.188	3/8	1/4 Lb.
19111	38-AB	.40	3/8	3/8	.188	3/8	1/4 Lb.
19112	12-AB	.40	1/2	3/8	.188	3/8	1/4 Lb.

SCREW TYPE



Hardened .020 Deep
Black Pentrate Finish

Packaged 12 To a Box

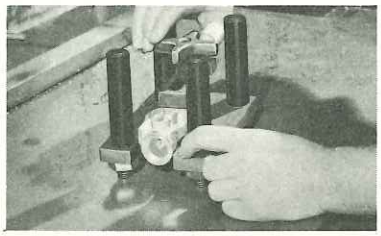
Part No.	Cat. No.	Price Each	A	B	Ship. Wgt. Per Doz.
19201	14-SF	.45	1/4	1/8	1/2 Lb.
19202	38-SF	.45	3/8	3/16	1/2 Lb.
19203	12-SF	.50	1/2	1/4	1 Lb.
19204	58-SF	.50	5/8	1/4	1 Lb.
19205	34-SF	.55	3/4	1/4	1 Lb.
19206	10-SF	.55	1"	1/4	1 1/2 Lbs.

DOUBLE END

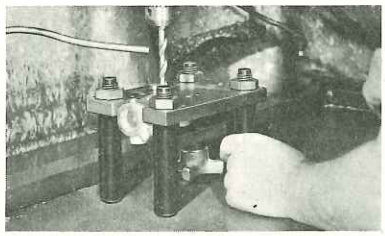
Hardened .020 Deep
Black Pentrate Finish

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	Ship. Wgt. Per Doz.
19001	10-DE	.75	1"	2 1/2 Lbs.
19002	15-DE	.85	1 1/2	3 Lbs.
19003	20-DE	.90	2"	4 Lbs.
19004	25-DE	1.00	2 1/2	4 1/2 Lbs.
19005	30-DE	1.05	3"	5 1/2 Lbs.
19006	40-DE	1.15	4"	7 Lbs.
19007	50-DE	1.30	5"	8 1/2 Lbs.
19008	60-DE	1.40	6"	10 Lbs.



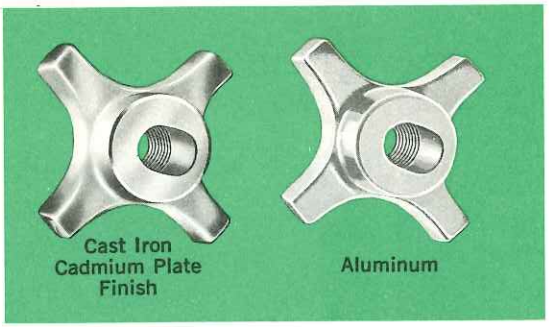
LOADING FROM THE BOTTOM

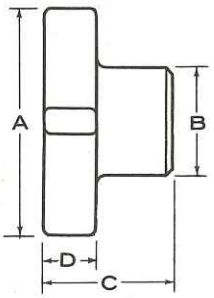


UPSET FOR DRILLING

NORTHWESTERN FAST ACTION TOOLS

QUICK-ACTING KNOBS





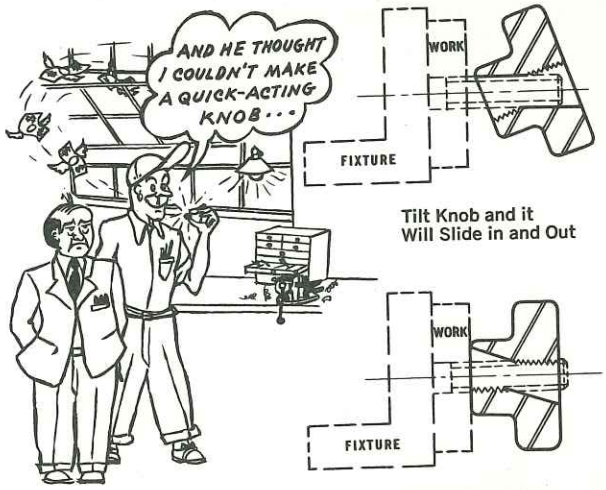
Packaged 12 To a Box

CAST IRON

Part No.	Cat. No.	Price Each	Thread Size	Max. Load Pounds	Ship. Wgt. Per Doz.	Outside Dimensions A	B	C	D
28101	QK-14	1.05	¼-20	1,200	1 Lb.	1 1/8	9/16	5/8	5/16
28102	QK-56	1.15	5/16-18	2,400	1½ Lbs.	1 1/2	11/16	7/8	3/8
28103	QK-38	1.35	⅜-16	3,500	3 Lbs.	2″	13/16	1″	1/2
28104	QK-12	1.65	½-13	7,000	4½ Lbs.	2 1/2	1″	1 1/8	9/16
28105	QK-58	2.15	⅝-11	10,100	7½ Lbs.	3″	1 1/4	1 1/4	5/8

ALUMINUM

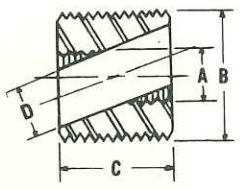
28001	AQK-14	1.30	¼-20	800	½ Lb.	1 1/8	9/16	5/8	5/16
28002	AQK-56	1.50	5/16-18	1,600	1 Lb.	1 1/2	11/16	7/8	3/8
28003	AQK-38	1.70	⅜-16	2,900	1 Lb.	2″	13/16	1″	1/2
28004	AQK-12	2.10	½-13	5,400	2 Lbs.	2 1/2	1″	1 1/8	9/16
28005	AQK-58	2.60	⅝-11	5,800	3 Lbs.	3″	1 1/4	1 1/4	5/8


AND HE THOUGHT I COULDN'T MAKE A QUICK-ACTING KNOB...
WORK
FIXTURE
Tilt Knob and it Will Slide in and Out
WORK
FIXTURE
Straighten Knob and Threads Will Engage for Clamping

WHY WASTE $$$ MAKING STANDARD ITEMS THAT CAN BE PURCHASED FOR PENNIES?

Northwestern TOOLS ARE UNCONDITIONALLY GUARANTEED

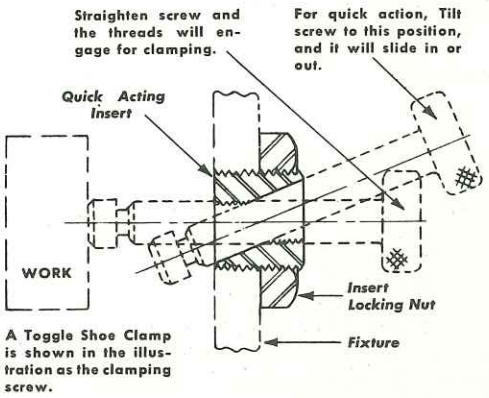
INSERTS AND LOCKING NUTS



QUICK-ACTING INSERTS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	Ship. Wgt. Per Doz.
26001	QAI-14	.95	¼-20	½-20	½	17/64	¼ Lb.
26002	QAI-56	1.05	5/16-18	5/8-18	5/8	21/64	½ Lb.
26003	QAI-38	1.25	⅜-16	¾-16	¾	25/64	1 Lb.
26004	QAI-12	1.65	½-13	1″ -14	1″	33/64	2 Lbs.
26005	QAI-58	2.15	⅝-11	1¼-12	1¼	41/64	3½ Lbs.

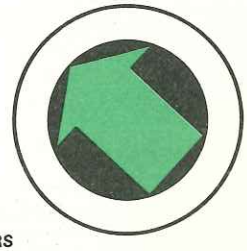

Straighten screw and the threads will engage for clamping.
For quick action, Tilt screw to this position, and it will slide in or out.
Quick Acting Insert
WORK
Insert Locking Nut
Fixture

A Toggle Shoe Clamp is shown in the illustration as the clamping screw.

INSERT LOCKING NUTS

Packaged 12 To a Box

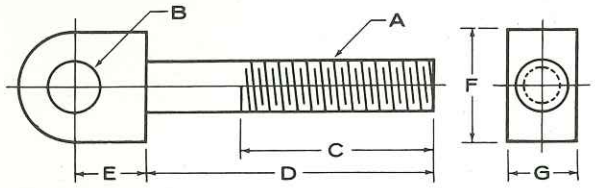
Part No.	Cat. No.	Price Each	Use With	Thread Size	Hex Size	Length	Ship. Wgt. Per Doz.
27001	ILN-14	.15	QAI-14	½-20	¾	3/16	¼ Lb.
27002	ILN-56	.30	QAI-56	5/8-18	1 1/16	¼	½ Lb.
27003	ILN-38	.35	QAI-38	¾-16	1⅛	5/16	1 Lb.
27004	ILN-12	.60	QAI-12	1″ -14	1½	⅜	2 Lbs.
27005	ILN-58	.95	QAI-58	1¼-12	1¾	7/16	2½ Lbs.



SYMBOL OF TIME SAVERS

Easily Installed on New or Old Fixtures Simply by Drilling and Tapping a Hole at the Desired Locatio...

Northwestern LATCH BOLTS (Swing Bolts)

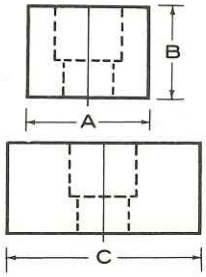


Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D	E	F	G	Ship. Wgt. Per Doz.
*21001	14-LB	1.25	1/4-20	1/4	3/4	1 3/16	5/16	1/2	5/16	1 Lb.
*21002	56-LB	1.30	5/16-18	5/16	1"	1 5/8	3/8	5/8	3/8	1 Lb.
*21003	38-LB	1.55	3/8-16	3/8	1 3/8	2"	1/2	3/4	1/2	1 1/2 Lbs.
*21004	12-LB	1.80	1/2-13	1/2	1 3/4	2 1/2	5/8	1"	5/8	3 1/2 Lbs.
*21005	58-LB	2.15	5/8-11	5/8	1 3/4	2 3/4	3/4	1 1/4	3/4	6 Lbs.
					LONG TYPE					
21101	14-LLB	1.40	1/4-20	1/4	1 1/4	2 3/16	5/16	1/2	5/16	1 Lb.
21102	56-LLB	1.45	5/16-18	5/16	1 3/8	2 5/8	3/8	5/8	3/8	1 1/2 Lbs.
21103	38-LLB	1.75	3/8-16	3/8	2"	3"	1/2	3/4	1/2	2 Lbs.
*21104	12-LLB	2.20	1/2-13	1/2	2 1/4	3 1/2	5/8	1"	5/8	4 Lbs.
*21105	58-LLB	2.80	5/8-11	5/8	2 1/2	4"	3/4	1 1/4	3/4	7 Lbs.

*Conform to NIJFCM Standards

FIXTURE KEYS



Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	Screw Size	Ship. Wgt. Per Doz.
14001	500-FK	.75	.500	1/2	3/4	1/4	1 Lb.
14002	562-FK	.80	.5625	1/2	3/4	1/4	1 Lb.
14003	625-FK	.85	.625	1/2	3/4	5/16	1 Lb.
14004	687-FK	.90	.6875	1/2	1"	5/16	1 1/2 Lbs.
14005	750-FK	.95	.750	1/2	1 1/4	5/16	2 Lbs.
14006	812-FK	1.00	.8125	1/2	1 1/4	5/16	2 Lbs.

Conform To NIJFCM Standards

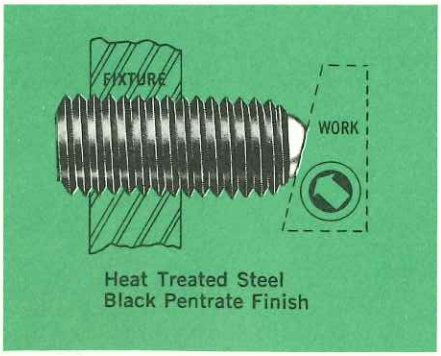
Precision Manufactured To Meet Your Most Exacting Requirements

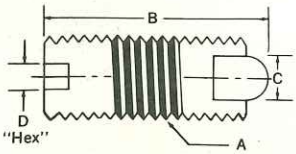
HEAVY NUTS

Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Thread Size	Hex Size	Length	Ship. Wgt. Per Doz.
18001	14-HN	.10	1/4-20	1/2	15/64	1/4 Lb.
18002	56-HN	.12	5/16-18	9/16	19/64	1/4 Lb.
18003	38-HN	.14	3/8-16	11/16	23/64	1/2 Lb.
18004	76-HN	.16	7/16-14	3/4	27/64	1 Lb.
18005	12-HN	.18	1/2-13	7/8	31/64	1 Lb.
18006	58-HN	.30	5/8-11	1 1/16	39/64	1 1/2 Lbs.
18007	34-HN	.40	3/4-10	1 1/4	47/64	2 1/2 Lbs.
18008	78-HN	.60	7/8-9	1 7/16	55/64	3 1/2 Lbs.
18009	10-HN	.80	1"-8	1 5/8	63/64	5 Lbs.

NYLON NOSE CLAMPS





Packaged 12 To a Box

Part No.	Cat. No.	Price Each	A	B	C	D "hex"	*Load Lbs.	Ship. Wgt. Per Doz.
22001	C-10	1.15	#10-32	1/2	1/8	3/32	1680	1/4 Lb.
22002	C-14	1.10	1/4-20	1/2	5/32	1/8	1760	1/4 Lb.
22003	C-14A	1.15	1/4-20	3/4	5/32	1/8	1760	1/4 Lb.
22004	C-14B	1.25	1/4-20	1	5/32	1/8	1760	1/4 Lb.
22005	C-14C	1.40	1/4-20	1 1/2	5/32	1/8	1760	1/4 Lb.
22006	C-56	1.20	5/16-18	3/4	13/64	5/32	2370	1/4 Lb.
22007	C-56A	1.30	5/16-18	1	13/64	5/32	2370	1/4 Lb.
22008	C-56B	1.45	5/16-18	1 1/2	13/64	5/32	2370	1/2 Lb.
22009	C-56C	1.60	5/16-18	2	13/64	5/32	2370	1/2 Lb.
22010	C-38	1.25	3/8-16	3/4	1/4	3/16	2800	1/4 Lb.
22011	C-38A	1.35	3/8-16	1	1/4	3/16	2800	1/2 Lb.
22012	C-38B	1.50	3/8-16	1 1/2	1/4	3/16	2800	1/2 Lb.
22013	C-38C	1.65	3/8-16	2	1/4	3/16	2800	1 Lb.
22014	C-12	1.55	1/2-13	3/4	11/32	1/4	6890	1/2 Lb.
22015	C-12A	1.65	1/2-13	1	11/32	1/4	6890	1/2 Lb.
22016	C-12B	1.85	1/2-13	1 1/2	11/32	1/4	6890	1/2 Lb.
22017	C-12C	2.00	1/2-13	2	11/32	1/4	6890	1 1/4 Lbs.
22018	C-12D	2.40	1/2-13	3	11/32	1/4	6890	2 Lbs.
22019	C-58	1.90	5/8-11	1	7/16	5/16	10,630	1 Lb.
22020	C-58A	2.30	5/8-11	2	7/16	5/16	10,630	2 Lbs.
22021	C-58B	2.70	5/8-11	3	7/16	5/16	10,630	3 Lbs.

*Load lbs. are Figured with a 30% Safety Factor

YOU CAN'T BEAT 'EM FOR POSITIONING OR INDEXING ON JIGS AND FIXTURES.
THEY REALLY WORK ON DIES, TOO — HOLDING THE WORK, BREAKING THE OIL SEAL....

SPRING PLUNGERS with Nylok® Inserts

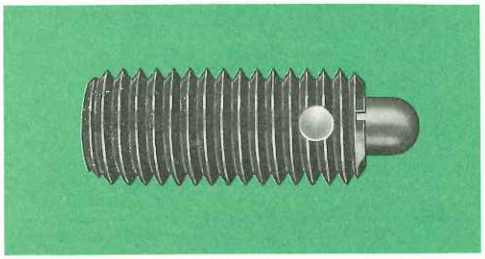
ALL BODIES HAVE A BLACK PENTRATE FINISH

STANDARD SPRING PRESSURES

1.3# to 42# Range — ½ way Compressed

Packaged 12 To a Box

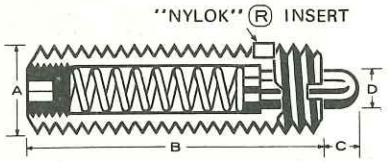
With Heat treated black pentrate steel nose



Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.001	Ship. Wgt. Per Doz.
33101	BPN-1	1.45	1.5	3.0	4.5	# 6-32	1/32	.062	.046	¼ lb.
33102	BPN-1A	1.45	1.0	1.3	1.6	# 6-32	3/8	.062	.046	¼ lb.
33103	BPN-2	1.45	2.7	5.0	7.3	# 8-32	5/8	.093	.070	¼ lb.
33105	BPN-3	1.45	2.9	7.0	11.1	#10-32	3/4	.125	.093	¼ lb.
33107	BPN-4	1.40	3.0	8.0	13.0	¼-20	1"	.187	.119	¼ lb.
33108	BPN-4A	1.40	3.0	8.0	13.0	¼-28	1"	.187	.119	¼ lb.
33109	BPN-4B	1.30	2.0	5.5	9.0	¼-20	3/4	.125	.119	¼ lb.
33111	BPN-5	1.40	3.0	9.0	15.0	5/16-18	1"	.187	.135	½ lb.
33113	BPN-6	1.40	5.5	10.0	14.5	3/8-16	1 1/8	.187	.186	½ lb.
33115	BPN-7	1.40	6.6	12.0	17.4	½-13	1 1/4	.250	.248	1 lb.
33117	BPN-8	1.95	10.5	18.0	25.5	5/8-11	1 1/2	.312	.310	1 lb.
33119	BPN-9	2.35	6.7	22.0	37.3	3/4-10	1 3/4	.312	.374	2 lbs.
33120	BPN-10	3.10	16.0	42.0	68.0	1"- 8	2 13/32	.500	.499	5 lbs.

With Black nylon nose

Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.002	Ship. Wgt. Per Doz.
33001	BNN-2	1.45	2.7	5.0	7.3	# 8-32	5/8	.093	.070	¼ lb.
33003	BNN-3	1.45	2.9	7.0	11.1	#10-32	3/4	.125	.093	¼ lb.
33005	BNN-4	1.40	3.0	8.0	13.0	¼-20	1"	.187	.119	¼ lb.
33007	BNN-5	1.40	3.0	9.0	15.0	5/16-18	1"	.187	.135	½ lb.
33009	BNN-6	1.40	5.5	10.0	14.5	3/8-16	1 1/8	.187	.186	½ lb.
33011	BNN-7	1.40	6.6	12.0	17.4	½-13	1 1/4	.250	.248	1 lb.
33013	BNN-8	1.95	10.5	18.0	25.5	5/8-11	1 1/2	.312	.310	1 lb.

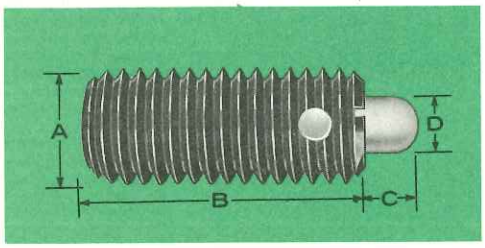


LIGHT SPRING PRESSURES

1# to 17.5# Range — ½ way Compressed

Packaged 12 To a Box

With Heat treated cadmium plated steel nose



Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.001	Ship. Wgt. Per Doz.
33201	CPN-1	1.45	0.5	1.0	1.5	# 6-32	1/32	.062	.046	¼ lb.
33202	CPN-2	1.45	0.7	1.5	2.3	# 8-32	5/8	.093	.070	¼ lb.
33204	CPN-3	1.45	1.3	2.0	2.7	#10-32	3/4	.125	.093	¼ lb.
33206	CPN-4	1.40	1.0	2.5	4.0	¼-20	1"	.187	.119	¼ lb.
33207	CPN-4A	1.40	1.0	2.5	4.0	¼-28	1"	.187	.119	¼ lb.
33209	CPN-5	1.40	1.5	3.0	4.5	5/16-18	1"	.187	.135	½ lb.
33211	CPN-6	1.40	2.8	5.0	7.2	3/8-16	1 1/8	.187	.186	½ lb.
33213	CPN-7	1.40	2.7	6.0	9.3	½-13	1 1/4	.250	.248	1 lb.
33215	CPN-8	1.95	3.5	7.0	10.5	5/8-11	1 1/2	.312	.310	1 lb.
33217	CPN-9	2.35	4.0	10.0	16.0	3/4-10	1 3/4	.312	.374	2 lbs.
33218	CPN-10	3.10	4.0	17.5	31.0	1"- 8	2 13/32	.500	.499	5 lbs.

With White nylon nose

Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.002	Ship. Wgt. Per Doz.
33301	WNN-2	1.45	0.7	1.5	2.3	# 8-32	5/8	.093	.070	¼ lb.
33303	WNN-3	1.45	1.3	2.0	2.7	#10-32	3/4	.125	.093	¼ lb.
33305	WNN-4	1.40	1.0	2.5	4.0	¼-20	1"	.187	.119	¼ lb.
33307	WNN-5	1.40	1.5	3.0	4.5	5/16-18	1"	.187	.135	½ lb.
33309	WNN-6	1.40	2.8	5.0	7.2	3/8-16	1 1/8	.187	.186	½ lb.
33311	WNN-7	1.40	2.7	6.0	9.3	½-13	1 1/4	.250	.248	1 lb.
33313	WNN-8	1.95	3.5	7.0	10.5	5/8-11	1 1/2	.312	.310	1 lb.

Reasonably Priced Wrenches for Spring Plungers are Available—See Page 23

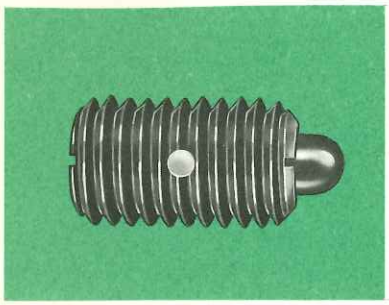
For greater locking torque when using the NYLOK® insert we recommend a 90° to 100° countersink 1/32" larger than the major diameter in the mating thread.

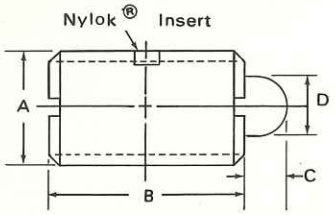
Spring Plungers **without** NYLOK® inserts are also available.

Northwestern

"SHORT" SPRING PLUNGERS with Nylok® Inserts

ALL BODIES HAVE BLACK PENTRATE FINISH





STANDARD SPRING PRESSURES

3.1 # to 28.5 # Range — ½ way Compressed

Packaged 12 To a Box

With Heat treated black pentrate steel nose

Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.001	Ship. Wgt. Per Doz.
33104	BPN-2A	1.40	1.5	3.1	4.75	# 8-36	7/16	.052	.070	1/4 lb.
33106	BPN-3A	1.30	1.75	4.0	6.25	#10-32	15/32	.065	.093	1/4 lb.
33110	BPN-4C	1.20	3.0	6.75	10.5	1/4-20	17/32	.078	.119	1/4 lb.
33112	BPN-5A	1.20	3.75	9.6	15.5	5/16-18	9/16	.084	.135	1/4 lb.
33114	BPN-6A	1.30	4.5	11.5	18.5	3/8-16	5/8	.110	.186	1/2 lb.
33116	BPN-7A	1.40	5.0	16.5	28.0	1/2-13	3/4	.151	.248	1/2 lb.
33118	BPN-8A	1.70	7.0	28.5	50.0	5/8-11	1 1/16	.215	.310	1 lb.

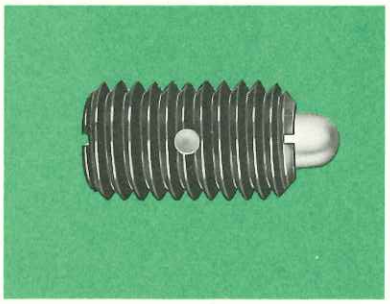
With Black nylon nose

Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.002	Ship. Wgt. Per Doz.
33002	BNN-2A	1.40	1.5	3.1	4.75	# 8-36	7/16	.052	.070	1/4 lb.
33004	BNN-3A	1.30	1.75	4.0	6.25	#10-32	15/32	.065	.093	1/4 lb.
33006	BNN-4C	1.20	3.0	6.75	10.5	1/4-20	17/32	.078	.119	1/4 lb.
33008	BNN-5A	1.20	3.75	9.6	15.5	5/16-18	9/16	.084	.135	1/4 lb.
33010	BNN-6A	1.30	4.5	11.5	18.5	3/8-16	5/8	.110	.186	1/2 lb.
33012	BNN-7A	1.40	5.0	16.5	28.0	1/2-13	3/4	.151	.248	1/2 lb.
33014	BNN-8A	1.70	7.0	28.5	50.0	5/8-11	1 1/16	.215	.310	1 lb.

LIGHT SPRING PRESSURES

1 # to 5.25 # Range — ½ way Compressed

Packaged 12 To a Box



With Heat treated cadmium plated steel nose

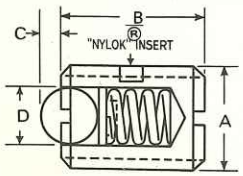
Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.001	Shp. Wgt. Per Doz.
33203	CPN-2A	1.40	.5	1.0	1.5	# 8-36	7/16	.052	.070	1/4 lb.
33205	CPN-3A	1.30	.75	1.62	2.5	#10-32	15/32	.065	.093	1/4 lb.
33208	CPN-4C	1.20	1.0	2.25	3.5	1/4-20	17/32	.078	.119	1/4 lb.
33210	CPN-5A	1.20	1.5	2.75	4.0	5/16-18	9/16	.084	.135	1/4 lb.
33212	CPN-6A	1.30	1.5	3.25	5.0	3/8-16	5/8	.110	.186	1/2 lb.
33214	CPN-7A	1.40	1.75	3.62	5.5	1/2-13	3/4	.151	.248	1/2 lb.
33216	CPN-8A	1.70	2.0	5.25	8.5	5/8-11	1 1/16	.215	.310	1 lb.

With White nylon nose

Part No.	Cat. No.	Price Each	END PRESSURES Start	½ Way	Full	A	B	C	D +.000 −.002	Shp. Wgt. Per Doz.
33302	WNN-2A	1.40	.5	1.0	1.5	# 8-36	7/16	.052	.070	1/4 lb.
33304	WNN-3A	1.30	.75	1.62	2.5	#10-32	15/32	.065	.093	1/4 lb.
33306	WNN-4C	1.20	1.0	2.25	3.5	1/4-20	17/32	.078	.119	1/4 lb.
33308	WNN-5A	1.20	1.5	2.75	4.0	5/16-18	9/16	.084	.135	1/4 lb.
33310	WNN-6A	1.30	1.5	3.25	5.0	3/8-16	5/8	.110	.186	1/2 lb.
33312	WNN-7A	1.40	1.75	3.62	5.5	1/2-13	3/4	.151	.248	1/2 lb.
33314	WNN-8A	1.70	2.0	5.25	8.5	5/8-11	1 1/16	.215	.310	1 lb.

Short Spring Plungers **without** NYLOK® inserts are also available.

BALL PLUNGERS with Nylok® Inserts



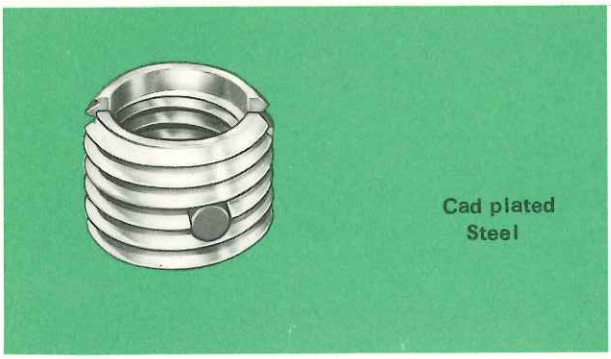
Packaged 12 To a Box

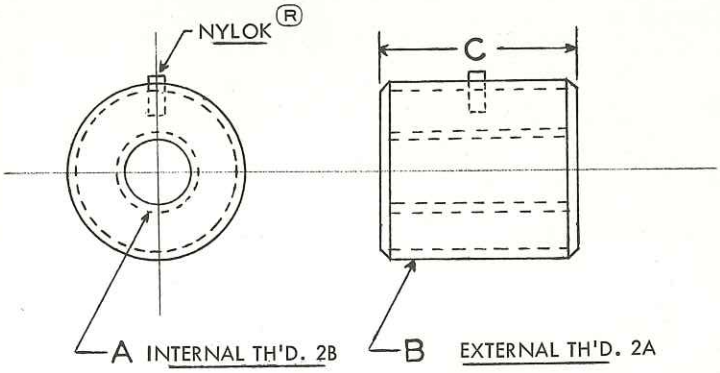
	Part No.	Cat. No.	Price Each	Color Code	END PRESSURES Start	Full	A	B	C	D	Ship. Wgt. Per Doz.
STAINLESS STEEL 1/8 # to 1 1/4 # Range	10001	B-00	1.70		0.12	0.5	#4-48	3/16	.020	.062	1/4 lb.
	10002	B-0	1.60		0.25	0.75	#5-40	1/4	.020	.062	1/4 lb.
	10003	B-1	1.50		0.5	1.0	#6-40	5/16	.023	.078	1/4 lb.
	10004	B-2	1.40		0.5	1.25	#8-36	11/32	.025	.093	1/4 lb.
STANDARD 1/2 # to 50 # Range	10005	B-3L	1.30	Silver	0.5	1.5	#10-32	33/64	.025	.093	1/4 lb.
	10006	B-3	1.30	Black	1.5	3.0	#10-32	33/64	.025	.093	1/4 lb.
	10007	B-3H	1.30	Gold	2.0	5.0	#10-32	33/64	.025	.093	1/4 lb.
	10008	B-4L	1.20	Silver	2.0	4.0	1/4-20	17/32	.035	.125	1/4 lb.
	10009	B-4	1.20	Black	3.0	7.0	1/4-20	17/32	.035	.125	1/4 lb.
	10010	B-4H	1.20	Gold	4.0	12.0	1/4-20	17/32	.035	.125	1/4 lb.
	10011	B-5L	1.20	Silver	2.0	4.5	5/16-18	37/64	.040	.156	1/4 lb.
	10012	B-5	1.20	Black	4.0	9.0	5/16-18	37/64	.040	.156	1/4 lb.
	10013	B-5H	1.20	Gold	6.0	17.0	5/16-18	37/64	.040	.156	1/4 lb.
	10014	B-6L	1.30	Silver	2.5	5.0	3/8-16	5/8	.048	.187	1/2 lb.
	10015	B-6	1.30	Black	5.0	10.0	3/8-16	5/8	.048	.187	1/2 lb.
	10016	B-6H	1.30	Gold	6.0	21.0	3/8-16	5/8	.048	.187	1/2 lb.
	10017	B-7L	1.40	Silver	3.0	6.0	1/2-13	3/4	.072	.281	1/2 lb.
	10018	B-7	1.40	Black	6.0	12.0	1/2-13	3/4	.072	.281	1/2 lb.
	10019	B-7H	1.40	Gold	6.0	30.0	1/2-13	3/4	.072	.281	1/2 lb.
	10020	B-8L	1.70	Silver	4.5	9.0	5/8-11	63/64	.096	.375	1 lb.
	10021	B-8	1.70	Black	9.0	18.0	5/8-11	63/64	.096	.375	1 lb.
	10022	B-8H	1.70	Gold	7.0	50.0	5/8-11	63/64	.096	.375	1 lb.

Conform To NIJFCM Standards

Northwestern

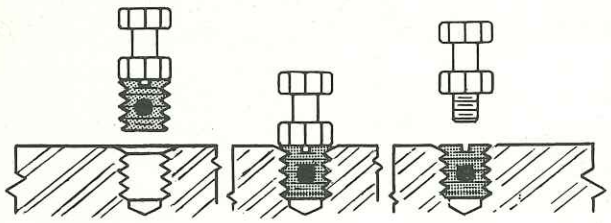
RE-NU-THREAD Inserts





Use **RE-NU-THREADS**
In new tooling where repeated assembly makes thread wear a problem
To repair stripped or worn threads in jigs fixtures – bolster plates – dies–machine tools
In magnesium – aluminum – cast iron copper – masonite – for load bearing threads in any material

EASY TO INSTALL!!
No special drills, taps or installation tools needed
Just THREE easy steps to new threads
1. Drill, countersink (90° to 100°)
2. Tap with U.S. Standard thread
3. Install with bolt or screwdriver



Packaged 12 To a Box

Part No.	Cat. No.	Price Each	Color Code	A	B	C	Shp. Wgt. Per Doz.
29001	RNT-1	.34	Silver	#10-24	3/8-16	13/32	1/4 Lb.
29002	RNT-2	.34	Gold	#10-32	3/8-16	13/32	1/4 Lb.
29003	RNT-3	.35	Silver	1/4-20	7/16-14	7/16	1/4 Lb.
29004	RNT-4	.35	Gold	1/4-28	7/16-14	7/16	1/4 Lb.
29005	RNT-5	.43	Silver	5/16-18	1/2-13	31/64	1/2 Lb.
29006	RNT-6	.43	Gold	5/16-24	1/2-13	31/64	1/2 Lb.
29007	RNT-7	.48	Silver	3/8-16	9/16-12	33/64	1/2 Lb.
29008	RNT-8	.48	Gold	3/8-24	9/16-12	33/64	1/2 Lb.
29009	RNT-9	.56	Silver	7/16-14	5/8-11	21/32	1/2 Lb.
29010	RNT-10	.58	Silver	1/2-13	3/4-10	21/32	1 Lb.
29011	RNT-11	.58	Gold	1/2-20	3/4-10	21/32	1 Lb.
29012	RNT-12	.80	Silver	5/8-11	7/8-9	11/16	1 Lb.
29013	RNT-12A	1.05	Silver	5/8-11	7/8-9	1 1/8	1 1/2 Lbs.
29014	RNT-13	.93	Silver	3/4-10	1"-8	25/32	1 1/2 Lbs.
29015	RNT-14	1.95	Silver	1"-8	1 3/8-12	1 1/4	3 Lbs.
29016	RNT-15	.80	Black	14 MM	7/8-14	11/16	1 1/2 Lbs.
29017	RNT-16	.93	Black	18 MM	1"-14	25/32	2 Lbs.

Color Code Information

Silver	Internal Thread, Nat'l. Coarse
Gold	Internal Thread, Nat'l. Fine
Black	Internal Thread, Metric

RE-NU-THREADS are left soft to allow altering.

RE-NU-THREAD Repair Kit

Part No.	Kit No.	Price Per Kit	Kit Consists of Quantity	Insert	Internal Thread	External Thread	Shp. Wgt. Per Kit
30001	TRK-1	22.50	8	RNT-1	#10-24	3/8-16	2 Lbs.
			8	RNT-3	1/4-20	7/16-14	
			8	RNT-5	5/16-18	1/2-13	
			6	RNT-7	3/8-16	9/16-12	
			6	RNT-10	1/2-13	3/4-10	
			4	RNT-12	5/8-11	7/8-9	
			4	RNT-13	3/4-10	1"-8	
30002	TRK-2	22.50	8	RNT-2	#10-32	3/8-16	2 Lbs.
			8	RNT-4	1/4-28	7/16-14	
			8	RNT-6	5/16-24	1/2-13	
			6	RNT-8	3/8-24	9/16-12	
			6	RNT-11	1/2-20	3/4-10	
			4	RNT-15	14MM	7/8-14	
			4	RNT-16	18MM	1"-14	

Complete with sturdy, see through styrene box for use in the home, shop or field.

For greater locking torque when using the Nylok® insert, we recommend a 90° to 100° countersink 1/32" larger than the major diameter in the mating thread.

DISTRIBUTORS STOCKING NORTHWESTERN PRODUCTS

ALA.—BIRMINGHAM—Perry Supply Company, Inc., 823 First Avenue, North

ARIZ.—PHOENIX—Di Eugenio Tool Center, Inc., 119 South 11th Avenue

CALIF.—GLENDALE—Southwest Supply Company, Inc., 6640 San Fernando Road
LOS ANGELES—Southwest Supply Company, Inc., 406 W. El Segundo Blvd.
OAKLAND—Western Tool & Supply Company, 4541 Oakport Street
SAN CARLOS—Tools & Gages, Inc., 960 Terminal Way
SAN DIEGO—Service Industrial Supply, 3624 University Avenue

CAN.—BRANTFORD, ONTARIO—Alexander Tools Ltd., 121 Greenwich St., Box 1088
ST. CATHERINES, ONTARIO—Alexander Tools Limited, 21 Hiscott, Box 323
WALKERVILLE, ONTARIO—Alexander Tools Ltd., Box 336
MONTREAL, QUEBEC—Alexander Tools (Quebec) Ltd., 2087 Chartier St.

COLO.—DENVER—Industrial Western, Inc., 88 Lipan Street

CONN.—EAST LYME—Machinery Distributors, 269 Flanders Road
NEWINGTON—Whitney Tool & Supply Company, 746 North Mountain Road
STRATFORD—Ellsworth Industrial Supply Company, 90 Rachel Drive, Box 328

D. C.—WASHINGTON—J. H. Elliott Company, 2101 New York Avenue, N. E.

DEL.—WILMINGTON—Holloway Brothers Tools, Inc., 4416 Kirkwood Highway

FLA.—FORT LAUDERDALE—Tool & Die Supply Co., Box 23248
TAMPA—Tool & Die Supply Company, 4015 Cypress Street

GA.—ATLANTA—Southern Tool Distributing Company, 54 Eleventh Street, N. E.

ILL.—ADDISON—Cutting Tool Supply, 130 West Fay Ave.
CHICAGO—Crown Supply Company, 5485 North Elston Avenue
CHICAGO—Daniels Supply Company, 2701 North Pulaski Road
CHICAGO—Krivo Industrial Supply Company, 1618 West Fullerton Avenue
CRYSTAL LAKE—Klitz Cutting Tools, 6209 Northwest Highway, Box 420
OAK PARK—Mid-Co Products Company, 221 Lake Street
ROCKFORD—Jonco Tool Supply, Inc., 1302-18th Avenue

IND.—INDIANAPOLIS—Kenneth J. Galm Company, Inc., 1301 West 16th Street
RICHMOND—Richmond Industrial Supply, Inc., 170 Ft. Wayne Avenue
SOUTH BEND—Powell Tool Supply, Inc., 1338-40 Mishawaka Avenue

IOWA—CEDAR RAPIDS—Allen Supply Company, Inc., 221 Third Avenue, S. W.
WATERLOO—Allen Supply Company, Inc., 505 West Parker

KAN.—WICHITA—Great Plains Equipment, Inc., 311 South Pattie Street

KY.—LEXINGTON—Lewis Industrial Supply Company, 1157 New Circle Road, N.E.
LOUISVILLE—Lewis Industrial Supply Company, 5755 Preston Highway

LA.—SHREVEPORT—Harris Frederic & Company, Inc., 100 Edwards Street

MD.—BALTIMORE—Electric Tool & Machinery, Inc., 1205-07 East 25th Street

MASS.—AUBURNDALE—Kenneth Crosby Company, Inc., 2120 Commonwealth Ave.
BOSTON—John R. Parry, Inc., 135 Pearl Street
SPRINGFIELD—Standard Industrial Supply Company, Inc., 246 Chestnut St.
WORCESTER—Industrial Suppliers of Worcester, Inc., 212 Summer St.

MICH.—DETROIT—Tool Sales Company, 46 Victor Avenue
GRAND RAPIDS—Ammerman Industrial Supply Company, 617 Bridge St., N. W.
JACKSON—Robbins Tool Supply, Inc., 3108 Page Avenue, Box 635
SAGINAW—Gransden Hall of Saginaw, 3415 Janes Road, Box 3206

MINN.—MINNEAPOLIS—Walter R. Hammond Company, 1419 Washington Ave., So.

MO.—KANSAS CITY—Die Makers Supply Company, 4001 Truman Road

NEBR.—OMAHA—T. S. McChane Company, 1115 Howard Street

N. J.—ALLENWOOD—Burgess Thomas Company, Box 321

N. M.—ALBUQUERQUE—Equipment Sales & Mfg. Co., 1018 4th St., N.W.

N. Y.—BUFFALO—Machinist's Tools, Inc., 839 Niagara Falls Boulevard
EAST SYRACUSE—R. H. Britton Machinery Sales, Inc., 3580 Burnet Avenue
ELMIRA—Gierston Tool Company, Inc., 3470 Oakwood Avenue
JAMESTOWN—Gierston Tool Company, 500 West Fourth Street
LONG ISLAND CITY—Regent Distributors, Inc., 27-55 Jackson Avenue
NEW YORK—Acme-Danneman Company, Inc., 45 West 18th Street
PLAINVIEW—Joseph A. Batlle & Company, Inc., 171 Ames Court, Long Island
POUGHKEEPSIE—Electra Industrial Distributors, Inc., 365-367 Mill Street
ROCHESTER—R. H. Britton Machinery Sales, Inc., 41 Saginaw Drive, Box 9774
UTICA—French Mill Supply Corporation, 133 North Genesee Street
WEST HEMPSTEAD—John W. Peters Supply Corp., 354 Hempstead Ave.

N. C.—MONROE—Price Equipment Company, 541 Morgan Mill Road, Box 338

OHIO—AKRON—Imperial Industrial Sales Company, 410 South Broadway
CINCINNATI—Mechanical Supplies Company, 1953 Losantville Avenue
CLEVELAND—Cleveland Tool & Supply Company, 1427-37 West Sixth St.
DAYTON—Dayton Supply & Tool Company, 520 East First Street
GALION—Lucas Supply Company, 233 South Market Street, Box 185
NEWARK—Lucas Supply Company, 432 South 22nd Street-Heath
TOLEDO—Mill & Factory Supply Company, 317 Tenth Street

OKLA.—OKLAHOMA CITY—Hart Industrial Supply Company, 726 West Sheridan
TULSA—Hart Industrial Supply Company, 4236 South 74th East Avenue

ORE.—PORTLAND—MacKinnon Tool & Machinery Co., 725 S. E. Morrison St.

PA.—BLAIRSVILLE—W. R. Robinson Co., 256 North Spring Street
CHESTER—Hardware & Supply Company of Chester, Edgmont at Fourth
ERIE—Erie Industrial Supply Company, 1616 West Eighth Street
GREENVILLE—Erie Industrial Supply Company, 86 Ohl Street
PITTSBURGH—Merit Machinery, Inc., 2311 Babcock Blvd.
READING—Reading Machine & Tool Company, 18 Water Street

R. I.—WARWICK—F. A. Spargo Company, 55 Venturi Avenue

TENN.—NASHVILLE—Tennessee Die Supply Company, Inc., 703 Spence Lane

TEXAS—DALLAS—Bill Lindsley Machinery Company, 601 West Commerce Street
FT. WORTH—Oliver H. Van Horn Company, Inc., 451 South Main Street
HOUSTON—Rex Supply Corporation, 3715 Harrisburg Boulevard

UTAH—SALT LAKE CITY—Fugate Industrial Sales, Inc., 1780 South 450, West

VT.—NORTH SPRINGFIELD—Standard Industrial, Inc., Main St.

VA.—SALEM—Shenandoah Tool & Supply Co., Inc., West 146 Fourth Street

WASH.—SEATTLE—Campbell Industrial Supply Company, 3433 Airport Way, South
SPOKANE—Campbell Industrial Supply Company, East 202 Trent Avenue
TACOMA—Campbell Industrial Supply Company, 2316 Jefferson Avenue

W. VA.—HUNTINGTON—Sterling Supply Company, 850 Seventh Street, West

WIS.—GREEN BAY—W. E. Thew Supply Company, Inc., 339 South Broadway
MILWAUKEE—Rex Tool Company, Inc., 2633 West Clybourn Street

SELECTION CHART FOR CLAMPING TOOLS

If machine tool is not listed, check table slot size before ordering.

Machine Tool	Clamping Kit	Step Block & Clamp Sets	T-Nut & Stud Sets
Atlantic Jig Borer No. 4000	437-CK	38 BCS	437-TS
Jig Borers Nos. 5000, 6000	562-CK	12 BCS	562-TS
Jig Borer No. 7000	687-CK	58 BCS	687-TS
Bickford Jig Borer, Box Tables—All sizes	687-CK	58 BCS	687-TS
Bridgeport Milling Machines	625-CK	12 BCS	625-TS
Brown & Sharpe Nos. 2, 2A and 3A	687-CK	58 BCS	687-TS
Nos. 2, 2B, 3B, 12 and 000 Plain Mills	687-CK	58 BCS	687-TS
Nos. 4A Universal and 4B Plain Mills	812-CK	34 BCS	812-TS
Ceruti Boring Mill Model 55	687-CK	58 BCS	687-TS
Models 75 & 100	812-CK	34 BCS	812-TS
Cincinnati Toolmasters and Contourmasters	687-CK	58 BCS	687-TS
Nos. 1-12, 1-18, 2-24, 3-24, 2 and 16	687-CK	58 BCS	687-TS
Nos. HP, 3, 4, 28, 34, 35, 36, 45, 46	812-CK	34 BCS	812-TS
Cleereman Jig Borers All Models	562-CK	12 BCS	562-TS
No. 325 Drilling Machines	687-CK	58 BCS	687-TS
Defiance Mill No. 22	687-CK	58 BCS	687-TS
Mills No. 25 and 26. ½ and 200 Drills	812-CK	34 BCS	812-TS
Ex-Cell-O Mill Style 602	687-CK	58 BCS	687-TS
Fosdick Jig Borers Nos. 30 and 3A	562-CK	12 BCS	562-TS
Sensitive Drills Nos. 4 and 5	500-CK	38 BCS	500-TS
Upright Compound Tables	687-CK	58 BCS	687-TS
Fray Milling Machines	562-CK	12 BCS	562-TS
Frew Vertical Mills and Profilers	750-CK	58 BCS	750-TS
Garvin Vertical Mill No. 1	562-CK	12 BCS	562-TS
Vertical Mill No. 4	750-CK	58 BCS	750-TS
Gorton P-12 and P-13	437-CK	38 BCS	437-TS
016A, P23, P32, 3Z, 8-D and 8½-D	500-CK	38 BCS	500-TS
122, 9J, 2-28, 3-24 and 3-48	687-CK	58 BCS	687-TS
Gray Milling Planers	812-CK	34 BCS	812-TS
Index Milling Machine No. 40	500-CK	38 BCS	500-TS
Milling Machines Nos. 45, 55, 60	625-CK	12 BCS	625-TS
Kempsmith Nos. 1, 2, 3, 32, 14″, 16″, 18″	687-CK	58 BCS	687-TS
Nos. 4 and 24″ Circular—32 and 33	812-CK	34 BCS	812-TS
Kent-Owens Nos. 2 and 2RV	625-CK	12 BCS	625-TS
Nos. 2-20 and 2-20DS	687-CK	58 BCS	687-TS
Nos. 1-14V, 1-V, 1-M and 1-8	562-CK	12 BCS	562-TS
No. 32 Tables, 14″ and 18″	375-CK	38 BCS	375-TS
Knight Milling Machines	687-CK	58 BCS	687-TS
Kondia Turret Mill	625-CK	12 BCS	625-TS
Linley Jig Borer No. 1	500-CK	38 BCS	500-TS
Jig Borer No. 1A	437-CK	38 BCS	437-TS
Lucas Boring Mills	812-CK	34 BCS	812-TS
Milwaukee Universal Mills	687-CK	58 BCS	687-TS
Moore Jig Borers and Grinders	375-CK	38 BCS	375-TS
Nichols Milling Machines	687-CK	58 BCS	687-TS
Portage Boring Mills Nos. 4 and 5	812-CK	34 BCS	812-TS
No. 3 Boring Mills	687-CK	58 BCS	687-TS
Pratt & Whitney Jig Borers No. 2	562-CK	12 BCS	562-TS
Jig Borers Nos. 3B and 3620-22	687-CK	58 BCS	687-TS
Reed-Prentice Boring Mills	687-CK	58 BCS	687-TS
Sheldon-Vernon No. 0 Mills	437-CK	38 BCS	437-TS
12″ Shapers	562-CK	12 BCS	562-TS
SIP Jig Borers—Hydroptic, 6, 7 and 8	625-CK	12 BCS	625-TS
MP-3C, PD-3 and PI-4	437-CK	38 BCS	437-TS
MP-2C, PD-2, PL-2 and PL-3	375-CK	38 BCS	375-TS
Sundstrand No. 00 Mills	562-CK	12 BCS	562-TS
No. 0 Mill	687-CK	58 BCS	687-TS
Van Norman Mills Nos. 22L and 26	687-CK	58 BCS	687-TS
Nos. 3, 20, 21 and 22	625-CK	12 BCS	625-TS

QUANTITY DISCOUNTS

Less than 24 .....Net
24 to 143.....Less 10%
144 to 499.....Less 15%
500 to 999.....Less 20%
1,000 or more.....Per Quote
Quantity Discounts are based on the total number of like items ordered.

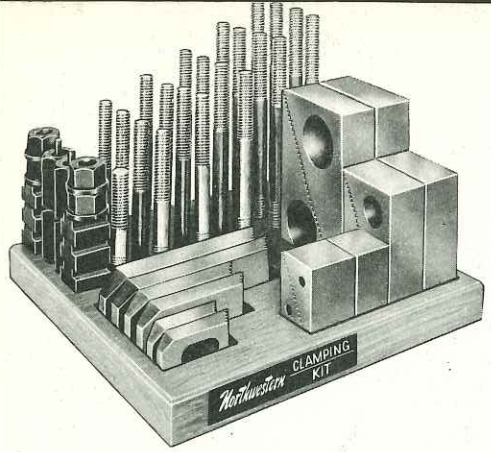
Example: The total number of studs ordered, regardless of sizes, determines the quantity discount.
TERMS: 1% 10 Days—30 Days Net.
F.O.B. Shipping Point.
Ask for quote on 500 or more pieces of any one size item.

MISCELLANEOUS ITEMS

Holder and Pins only for 375-TS, 437-TS, 500-TS, or 560-TS	$2.50 ea.
Holder and Pins only for 562-TS, 625-TS, 680-TS, or 687-TS	3.00 ea.
Holder and Pins only for 750-TS, 800-TS, 12-PP, or 58-PP	3.00 ea.
Holder and Pins only for 812-TS, 875-TS, 100-TS, or 102-TS	3.50 ea.
Holder and Pins only for 1060-TS, 1062-TS, 34-PP, 78-PP, or 10-PP	3.50 ea.
Holder only for 38 BCS, S12 BCS, or S58 BCS	3.75 ea.
Holder only for 12 BCS or 58 BCS	5.75 ea.
Holder only for 34 BCS	7.00 ea.
Holder only for 10 BCS	7.50 ea.
Holder only for 375-CK, 437-CK, 500-CK, or 560-CK	6.25 ea.
Holder only for S562-CK, S625-CK, or S680-CK	6.75 ea.
Holder only for S687-CK, S750-CK, S800-CK, or 562-CK	8.75 ea.
Holder only for 625-CK, 680-CK, 687-CK, 750-CK, or 800-CK	8.75 ea.
Holder only for 812-CK, 875-CK, 102-CK, or 1060-CK	10.50 ea.
Holder only for 100-CK or 1062-CK	11.00 ea.
Case only for A-S or A-A	3.50 ea.
Case only for RE-NU-THREAD KIT	1.00 ea.
Retaining Springs only for Toggle Shoe Clamps	.10 ea.
Wrench for #6-32 Spring Plunger	.90 ea.
Wrench for #8-32 Spring Plunger	.90 ea.
Wrench for #10-32 Spring Plunger	1.10 ea.
Wrench for ¼-20 Spring Plunger	1.20 ea.
Wrench for ¼-28 Spring Plunger	1.20 ea.
Wrench for 5/16-18 Spring Plunger	1.50 ea.
Wrench for ⅜-16 Spring Plunger	1.65 ea.
Wrench for ½-13 Spring Plunger	1.85 ea.
Wrench for ⅝-11 Spring Plunger	2.00 ea.
Wrench for ¾-10 Spring Plunger	2.25 ea.
Wrench for 1″-8 Spring Plunger	2.50 ea.

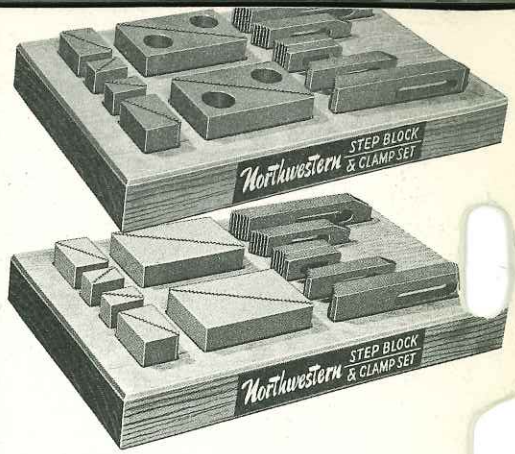
SPRING PLUNGER COMPONENT PARTS:

Noses only for #6-32 thru ½-13 Body Sizes	.30 ea.
Noses only for ⅝-11 thru 1″-8 Body Sizes	.40 ea.
Set Screws only for #6-32 or #8-32 Body Sizes	.15 ea.
Set Screws only for #10-32 thru ½-13 Body Sizes	.10 ea.
Set Screws only for ⅝-11 or ¾-10 Body Sizes	.15 ea.
Set Screws only for 1″-8 Body Sizes	.20 ea.
Springs only for #6-32 thru ½-13 Body Sizes	.25 ea.
Springs only for ⅝-11 thru 1″-8 Body Sizes	.40 ea.

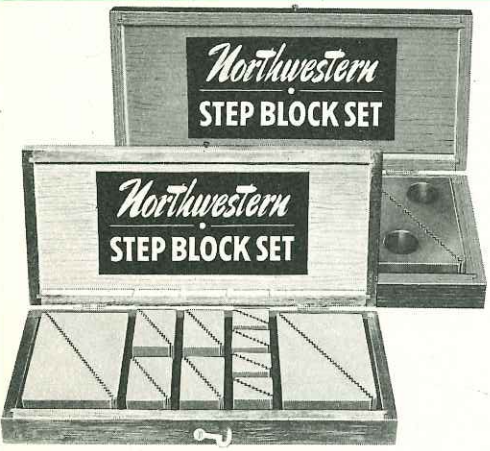


PAGES 4 & 5

PAGES 3 & 22



PAGE 8



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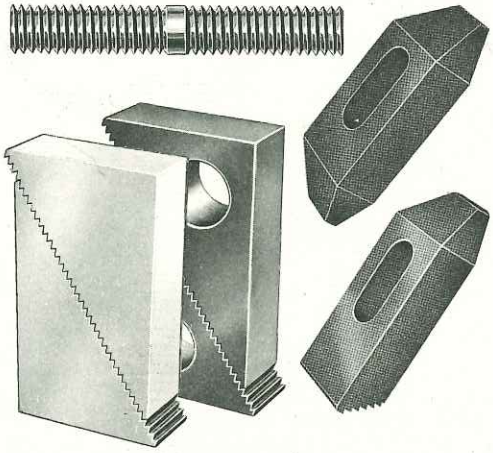
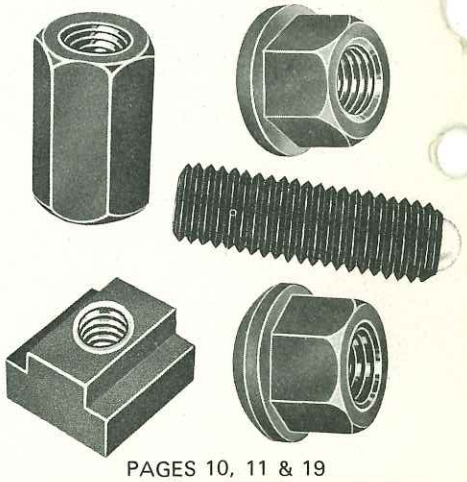
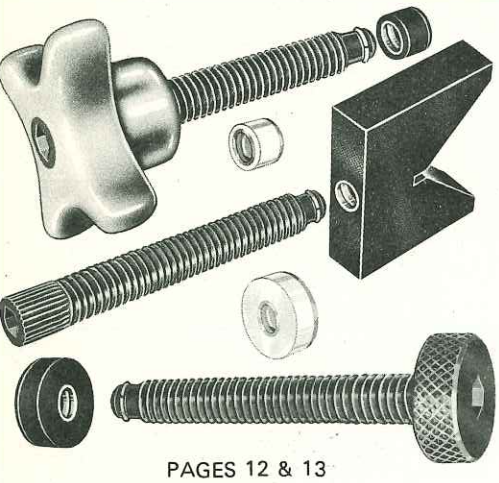


PAGES 7, 9 & 10

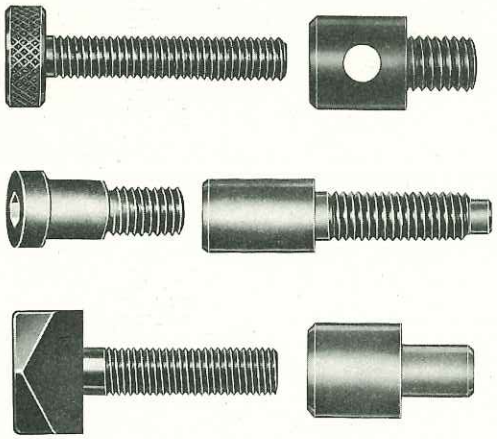


PAGES 10, 11 & 19

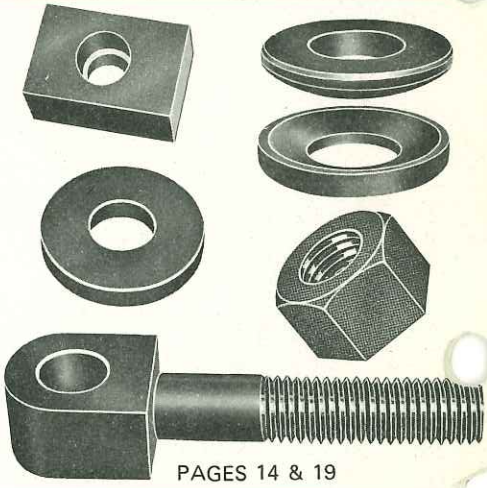
FAMOUS NORTHWESTERN LINE OF TOOLROOM COMPONENTS AND ACCESSORIES



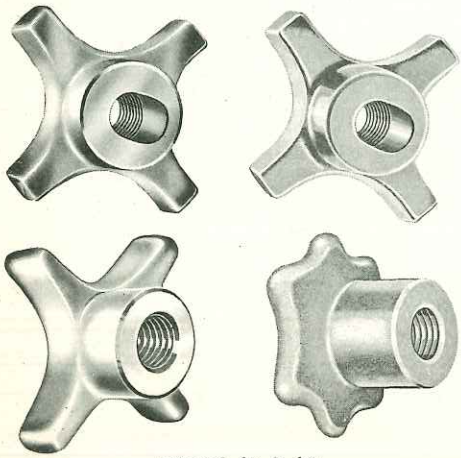
PAGES 12 & 13



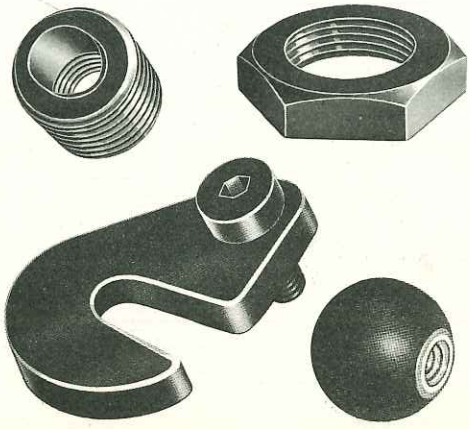
PAGES 16 & 17



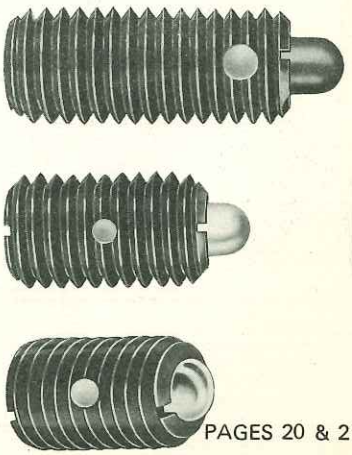
PAGES 14 & 19



PAGES 15 & 18



PAGES 14, 16 & 18



PAGES 20 & 21